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EDITED BY

GEORGE M. GOULD, A.M., M.D.

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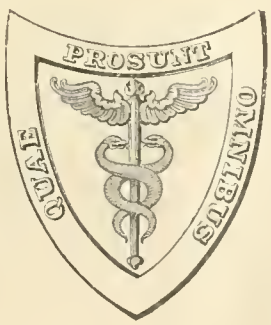

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ORIGINAL ARTICLES.

FIVE CASES OF SUDDEN DEATH DUE TO ASCENDING NEURITIS.

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ONE of the very unpleasant experiences to which all physicians are from time to time subjected is the sudden and unexpected death of a patient. As I have had my share of this sort of humiliation, it may not be quite out of place to make a few remarks on some of my cases for the perusal, and perhaps benefit, of others. A number of examples of sudden death after diphtheria I have already published—some in the *Canadian Practitioner* and some in THE MEDICAL NEWS. The cases I now propose relating were in adult patients, in whom it was quite impossible to anticipate a sudden and fatal termination. It is in this mainly that their interest rests.

CASE I.—This patient was a married lady, aged thirty years. In September, 1890, she thought she caught cold in her legs, and as a consequence had some rheumatic pains and tenderness. There was a gradual loss of power below the knees. The muscles in the tibio-fibular regions atrophied a good deal, and gave to the electric test the reaction of degeneration. The feet and toes dropped to an increasing degree. The pain was at times very great. The condition steadily ascended so as to involve the muscles in the back of the thighs. The muscles supplied by the anterior crural nerve escaped; and on the day of the patient's death the patellar reflex was good, and the patient had the power of extending the leg upon the thigh, and flexing the thigh upon the pelvis. There was no loss of control over the bladder or rectum.

Shortly after the symptoms began in the legs, there were ill-defined pains in the arms, and a loss of power. These conditions increased, until the pain became almost unendurable; and the motor loss was very pronounced. There was the reaction of degeneration, rapid wasting of muscles, and extreme tenderness on pressure. Throughout the progress of the case, till the last day, there was no evidence of any cord-affection.

On making a visit one afternoon early in November, I found the pulse very rapid, at least 150 per minute, weak and irregular. The woman complained of faintness and difficulty in breathing. In the evening, about 8 o'clock, while attempting to raise her head for a drink, she rolled over and immediately died.

What was the cause of this sudden termination of the case? It may be well here to note that the paralysis in the arms was clinically of an ascending character. The hands first became affected, then the forearms, and finally the arms and the deltoids. I think the case one of peripheral ascending neuritis; and that, as the disease ascended, the brachial plexus became involved. According to the researches of Gaskell and others, the results of which I have been able to confirm, the spinal nerves going to the heart come from the fifth, sixth, seventh, and eighth cervical, and the first, but mainly the second, dorsal nerves. These roots pass into the second and thir cervical sympathetic ganglia, and thence by the cardiac splanchnics to the heart. I think we are here on the threshold of an important truth. The inflammation had ascended the nerves of the arm to the plexus, and then involved the spinal nerves for the heart; hence the sudden death in a case in which the heart was free from disease. In this case there was no history of any form of chronic poisoning by lead or arsenic, and the patient was very temperate in her habits. Syphilis was also thoroughly excluded.

It may be well to call attention to the violent axillary pains and arm-pains felt in cases of angina pectoris. The true explanation is no doubt to be found in the origin of spinal cardiac nerves from the same roots as form the brachial plexus. In one case of angina of which I know there is most excruciating pain along the inner side of the arm to the little finger; and another severe pain along the course of the second dorsal nerve, the one from which, according to Gaskell, the main cardiac root springs. Just so, in reverse order, in the case of ascending neuritis, the origin of the cardiac nerves is reached, and the vital springs of life are thus touched unexpectedly by an unseen hand, and the patient is thus hurriedly carred off.

In my case I cannot verify this diagnosis by a post-mortem examination, yet I think the clinical history, showing the existence of a neuritis, is so clear that this must be taken as proved.

CASE II.—This case is unique in several respects. The patient, a female, was in her forty-third year. In February, 1890, she had an attack of influenza, from which she never fully recovered. From the

date of this attack she had paroxysms of pain in the abdominal viscera of a most dreadful character. She would writhe and sweat in these attacks of pain. It must be borne in mind that she was somewhat excitable, and to some extent may have exaggerated her sufferings; but there was real distress. The pain was described as grinding, burning, boring, twisting, or piercing. These attacks were almost regularly periodic, usually having their acme toward morning.

The list of anodynes, analgesics, and antiperiodics was exhausted; and it was often a wish that there were not some more to try, if for no other reason than to show that the therapeutic armamentarium had not been wholly depleted. Any relief that came from treatment was of a very temporary character. On making use of some new agent there would appear to be some real or fancied benefit for a short time. The patient lost weight and strength. At no time, after the recovery from influenza, was there any appreciable amount of fever, the thermometer ranging from normal to 100° F., the latter point, however, being very seldom reached. All of the reflexes, superficial and deep, were normal. The pulse was never rapid, unless the patient was excited or had made some exertion. Constipation was very troublesome, and this fact is of some importance in the case, as throwing some light upon it. All are familiar with the constipation that annoys patients suffering from paraplegia. We also know that if a nerve is injured the muscles supplied by it atrophy. The sympathetic is the nerve-supply to the intestinal walls. It is true that the nerves entering the intestines are a mixture of sympathetic and cerebro-spinal, and any disease or lesion of the sympathetic would thus cut off the intestines from the cord, producing the same results as if the cord itself were the seat of the lesion. The roots passing into the sympathetic from the cord are both motor and sensory. In the case of locomotor ataxia, the violent lightning-pains in the legs are due to the fact that the posterior sensory spinal roots are involved, and not merely to the fact that the fasciculi cuneati are diseased. So in the case under consideration. The disease in the sympathetic nerves must involve the spinal fibers in them, and as these latter are motor and sensory, there will consequently be sensory symptoms.

The pulse was good throughout the attack, and remained so till the day prior to death. The afternoon before the patient died she was out driving for a short time, as, for a few days, she had been easier than usual. During the forenoon of the following day she complained of her heart fluttering a great deal, and there was some difficulty in breathing. She appeared pale and haggard. At noon she partook of some light nourishment, and then had her wrapper put on and sat in the easy-chair for about an hour. She became very quiet, and in a few minutes fainted away and died.

How can we explain this sudden death? The post-mortem examination revealed the condition of a neuritis distributed through the abdominal cavity. The sympathetic ganglia were congested, and the visceral nerves inflamed and degenerated. The microscopic examination, made with great care, revealed the fact that the nerve-tissue was undergoing marked changes of a degenerative character, such as are met with in neuritis. This neuritic and degenerative process had been gradually going on, and ascending until the roots were reached that go to form the cardiac splanchnics. When this happened, the patient suddenly died of cardiac failure, from lack of cardiac innervation. The examination of the muscular tissue of the intestines showed atrophy, in some places very marked, similar to that found in an ordinary muscle that had been cut off from its motor nerve supply. In the foregoing pathologic anatomy we have a clear explanation of the pain, the constipation, and the sudden death. Some may object, and say that if the nerves were inflamed the pain ought to have been constant. Such was the case with the violent periodic attacks already mentioned. Cases of sciatica and trigeminal neuralgia are met with, in which the pain is markedly periodic, and yet the underlying condition is clearly a neuritis.

Case III.—This case is one of very great interest on account of the direct nature of the evidence of the existence of an ascending neuritis. An elderly lady of sixty-seven years had the left axilla cleaned out for a malignant neoplasm, extending from the breast, that had been removed some months previously. The operation was very difficult, as the enlarged glands were adherent to every tissue. The nerves in the axilla were no doubt considerably injured. There developed after the operation a very severe neuralgia of several of the branches of the brachial plexus, but mainly of the ulnar and cutaneous divisions. This began about three weeks after the operation. The wound was carefully treated antiseptically, and healed kindly. In spite of all efforts to control it, the neuralgia increased steadily for two weeks. There was atrophy of the muscles supplied by the ulnar nerve, and some paresis and anesthesia over the areas supplied by the nerves named. Clinically, the symptoms were such as would justify the diagnosis of neuritis.

One morning, at about 10 o'clock, as the patient was making some exertion in dressing herself, she was taken with a violent attack of palpitation, and had to be helped to bed. I saw her two hours after the attack of palpitation began. When I made an examination of the heart it was then beating only thirty-two times a minute. Stimulants and restoratives were freely tried, but to no purpose, as the patient sank with great rapidity, and died within half an hour of my arrival.

The nerves of the affected side were examined. The spinal roots from the sixth cervical to the second dorsal were found inflamed. Here I think we have an explanation for the sudden death. The injured nerves in the axilla became inflamed, and this set up the process of an ascending neuritis,

which in time reached the roots of the spinal nerves, and then, as already explained, involved the spinal nerve-supply passing to the heart. The heart itself was quite normal, and presented no conditions that could in any way account for the suddenly fatal termination of the case. To one who does not wish to be hypercritical, it seems that the evidence is sufficient in this case to justify the opinion that the neuritis in the axillary nerves was caused by the operation; that this neuritis pursued an ascending course; that it finally reached the spinal origin of the cardiac nerves; and that this caused the great attack of palpitation, followed by the marked reduction of the number of heart-beats till they ceased altogether.

CASE IV.—This case is not so direct in its proof as the others; and yet there is good evidence for regarding it as one of ascending neuritis, ultimately reaching the cardiac nerves. The patient was forty-three years of age, and had had her left breast removed for carcinoma. At the time of the operation all the axillary glands were removed. The wound healed well, the patient being up and around in two weeks from the date of the operation. There was not the slightest evidence of any form of cardiac disease at the time of the operation, or at any subsequent time. I frequently saw the patient from the date of the operation till the time of her sudden death, and on no occasion was there the least symptom of heart-trouble. About three weeks before her death I was consulted for pains and numbness extending along the inner side of the arm and forearm. The nerves mainly affected were the ulnar, the internal cutaneous, the nerve of Wrisberg, and some of the intercostals. There was marked paresthesia over the regions supplied by these nerves. There was pain along their course, and some tenderness on pressure. Three days before death there was discovered a loss of faradic irritability in the muscles supplied by the ulnar nerve. During the night preceding her death she had severe pain in the region of the brachial plexus, with migrating pains in the neck. In the morning she felt unrested, and remained in bed for some time. When alone she made an attempt to get up and dress. When she had about half her clothes on she fell on the floor. Her servant ran up-stairs, and found her lying in an apparent faint. I was telephoned for, but before I got to the house, only a short distance, she had expired.

I did not secure a post-mortem examination, and it is here that the case lacks some of the directness in support of the view that death was due to an ascending neuritis. We have, however, clear clinical evidence of the existence of neuritis involving the ulnar, internal cutaneous, and some other branches of the brachial plexus; and we have also every reason for regarding the heart as free from any form of organic or functional disturbance that could afford an explanation of the very sudden and unexpected death. She was a lady in good circumstances, having every comfort, and without the slightest anxiety or mental worry about anything. Knowing the fact that sudden death may take place in cases of neuritis when the cardiac nerves become involved, there is reason for regarding this as the cause in the present case, corroborated to a very great extent by the entire absence during life of any sign or symptom of disease of the heart.

CASE V.—This was the case of a married lady who was in her twenty-fourth year at the time of her death. She had been married three years, and during this period had been pregnant only once, when she miscarried in the fourth month, and six months after marriage. She menstruated only once after the miscarriage. She had ceased menstruating for over two years at the date of her death. She was spare in flesh, but very active and enjoyed good health. In June she was taken with a very severe attack of diphtheria, from which she recovered. In the middle of September she was exposed and became wet and chilled. On the third day after this I was sent to see her on account of numbness and loss of power in the hand. She complained of marked "pins and needles" sensation in them, while the muscle-power was not more than half of the normal state. The heart was examined and found normal, the beats being full and strong. The palatine and laryngeal muscles were quite free from paresis. There was no numbness or paresthesia in the areas of distribution of any of the cranial nerves. The condition of the arms rapidly grew worse, and the loss of sensation and the paralysis became complete by the end of the first week. The woman died very suddenly on the eleventh day of her illness, with symptoms of syncope or acute heart-failure. Up to the very last the laryngeal and pharyngeal muscles retained their tone, and there was no difficulty in speech or deglutition. It was noticed on the day of her death that there were no abdominal movements during respiration—a fact most likely due to paralysis of the diaphragm, as the abdominal muscles themselves were not involved. Examination of some of the branches of the brachial plexus revealed the existence of neuritis. This began in the hands, and rapidly extended up the arms, taking in one group of muscles after another, till the origin of the cardiac roots was reached, and the splanchnics going to this organ lost their energy over the heart-muscle, when it ceased in the condition of diastole.

The foregoing cases are very interesting. The notes of them cover a considerable time, and are now collected together in the form of a short paper, hoping that it may prove of some interest and elicit from others any further cases of this important condition. It must not be thought, however, that these cases are advanced as a basis for a theory to explain all cases of sudden death due to cardiac failure. In a very able paper by Prof. John A. McWilliam, in the *British Medical Journal* for January, 1889, it

is stated that some cases of sudden heart-failure are due to a condition of fibrillar contraction or twitching in the heart-muscle. In this view I think Prof. McWilliam is quite correct. I found the same condition produced in a number of the animals I experimented upon in the year 1883 (a report of which was published in the *Canadian Practitioner* for August of that year), in reference to the circulation in the coronary arteries. One of the early symptoms of nerve-degeneration is muscle-degeneration, which is revealed by fibrillar contractions and twitchings. In the case of neuritis involving the cardiac nerves, this same condition of muscular degeneration would occur, and hence there would be a ready explanation for such movements in the heart-muscle as we find so ably delineated in Mc William's paper.

FIFTEEN YEARS' OBSERVATION AMONG BEER-DRINKERS.

By LAMBERT OTT, M.D.,
OF PHILADELPHIA.

The manufacture of beer requires the laboring brewer to expose himself to various temperatures ranging from 90° F. to a cold and damp cellar at the freezing-point, although it is not often that one man works in different departments in one day, the members of each gang usually having more or less continuous work at one job, to which they are confined by reason of their experience and training.

It may happen that one man, passing from the "brew-house" through the fermenting-room, thence through the beer storage rooms, cooled by an ice-machine, passes through a varying temperature having the extremes of 100° F. and freezing. In a healthy young adult, not undermined by excesses, and protected by ample clothing, no untoward results follow.

The majority of laborers in a brewery are Germans, with a sprinkling of Irish and a few Americans. The German brewer is by nature an honest, industrious, and good-natured individual, fond of his home and family, and in every way a congenial person; even the Irish and Ameriean brewer partakes of those kind and congenial elements so common to the German brewer, leading one to believe that the constant association and use of beer as a beverage begets a distinctive type of humanity, possessing natures kind and pleasing. The physical peculiarities are a florid complexion, due in many cases to capillary varicosity, and a tendency to the accumulation of fat. Often have I observed young men, of slight build, with no inherited predisposition to obesity, after a year or two in a brewery, acquire a sunny disposition and an accumulation of fat, the attenuated and introspective dyspeptic being transformed into the happy and fat brewer. In rare cases idiosyncrasies are apparent, in which a small and bony individual refuses to acquire fat, even after excessive libations of beer. It is not easy to explain this difference, but those possessing this peculiarity are of a vicious inherited tendency, carrying a diathesis which at an opportune time develops some irremediable ill.

The blood of the beer-drinker—I use the term as applied to men constantly employed in breweries, and drink nothing but beer—shows microscopically an increased proportion of red corpuscles and a diminution of white corpuscles. An inveterate beer-drinker, suddenly ceasing his drinking, suffers no special inconvenience beyond the natural longing, which is of short duration, besides a rapid loss of flesh—I should say redundant flesh—a decline of his florid color, which is soon replaced by a paler hue, but at no time approaching the pallor of anemia. Those consuming large quantities of beer daily, and eating very little food, after a time become stupid, dull to their surroundings, and only aroused from this semi-drowsiness by a fit of anger or an exciting incident; but this mental torpor is only temporary, disappearing as soon as the habit is corrected. When an abnormal condition is caused by excessive beer-drinking, the sudden abstention does not prevent a rapid return to the norm, this fact standing in marked contrast to what occurs to the whiskey-drinker.

I have to differ with the opinion of some writers on stomach-diseases that beer retards digestion, notably Osler, in his recent *Practice*, who otherwise is so clean-cut and select in his therapeutics. The Germans consume three and four large glasses of beer daily with their luncheon or dinner, and I have never yet heard or seen complaints of indigestion, whereas with the use of other alcoholic potations during meals it is different. I have examined the vomit of the whiskey-drinker after having been in the stomach five or six hours, and no indication of chymification of the ingested food was evident. Another peculiarity of the beer-drinker is the enormous bladder-capacity he acquires, passing at one time as much as one quart or more of urine. Stone in the bladder and cystic diseases are exceedingly rare.

Among the pathologic conditions produced by excessive libations of beer, foremost is *subacute gastritis*. This disease is most prevalent in the summer months. Among one hundred cases noted, seventy-eight occurred during the months of June, July, and August. The cause is the pouring of cold beer into an empty stomach; but I have observed this important point, that those suffering from gastric trouble, for the most part, took their morning "Schnapps,"

with a half-dozen drinks interspersed between their drinks of beer. Those confining their drinking entirely to beer suffer less, especially when taking their beverage after or during a meal, and in warm weather avoiding large draughts of cold beer when overheated or into an empty stomach.

The few prominent and ever-present symptoms of this variety of subacute gastritis are: great lassitude, total loss of appetite, vomiting of all food, vomiting of mucus mixed with bile, particularly in the morning; heavy, dull pain in the epigastrium, and a swollen, beefy tongue, with highly red edges. These patients, further, complain of weakness, headache, nausea when smelling cooking, seldom fever, rarely a sub lingual temperature of 100° F., tenderness over the stomach, relaxation of the bowels, profuse perspiration on slight exertion, and palpitation of the heart. There is extreme nervousness, sometimes sleeplessness, and, what is peculiar, an aversion to all drinks. The urine is scanty, high-colored, and shows a heavy deposit of urates. There is one symptom in particular which the brewer complains of when visiting your office, and that is great lassitude. If on further inquiry you find no fever and an aversion to food, one can invariably conclude the case to be one of subacute gastritis. Often there is complaint of such complete prostration and an expression of a fear of typhoid fever developing; but the trouble is gastric and of short duration. The absence of pyrexia at once excludes a continued fever. The duration of the attack is from three to seven days, much depending upon the care the patient takes of himself.

The prognosis is favorable.

In treatment absolute rest in bed is to be insisted upon, with total abstinence from all stimulating drinks; liquid and easily digested diet, including hot milk, hot barley-water and rice-water, beef-tea, hot soups, etc., is to be ordered; and when hot drinks are objectionable cold drinks may be permitted. Milk should be taken with care, slowly sipped, and holding a quantity in the mouth before swallowing; otherwise in most cases it curdles and is rejected. Counter-irritation by means of an application of mustard to the stomach until the skin is permanently reddened is also useful, and the internal administration of the following prescription, in conjunction with the foregoing regimen, I have found a specific:

R.—Bismuthi subnit. . . . . ʒvj.
Sodii bicarb. . . . . ʒj.
M. et div. in chart. no. xij.
Sig.—One powder every two or three hours, preferably on an empty stomach.

For the aggravated thirst I order Vichy or Seltzer water alone, or in case of decided weakness, with equal parts of Rhine or claret wine. In from three to five days convalescence sets in, as evidenced by the return of the appetite, cleaning of the tongue, and a disappearance of the weakness; at this time it is all-important to forbid any malt or spirituous liquors, even a small potation causing an exasperating relapse.

Among two hundred brewers examined as to the condition of the bowels, relaxation was the rule; from two to four bowel-movements daily being the average, which they consider normal. Constipation is rare.

Diseases of the lungs and heart seem uninfluenced by excessive libations of beer. The kidneys are rendered active; the urine passed is light in color, of a low specific gravity, and profuse in quantity. Cirrhotic kidney and hob-nail liver, so common in the whiskey-drinker, *are not found in the beer-drinker.*

In eighty cases of acute alcoholism and delirium tremens occurring in laborers in breweries 75 per cent. were consuming from six to eight drinks of whiskey or brandy in addition to their beer. Cases of delirium tremens were usually heavy beer-drinkers with occasionally "Schnapps," who by and by found too little stimulation in beer, cast it aside and drank stronger alcoholic liquor altogether, until the direst results followed. It is seldom that one finds a pure beer-drinker affected with delirium tremens; oftener acute alcoholism is encountered, and in these cases there is an additional element, as bad home-surroundings or a vicious taint of the system.

I have had under observation a few brewers, rather laborers in a brewery, for fifteen years who drank on an average from twenty-five to fifty glasses of beer daily, in the aggregate from one to two gallons for each sixteen or eighteen hours, and at no time have they been ill or suffered any of the evil consequences of excessive libations. None drank anything but beer, using no tobacco and eating three hearty and well-prepared meals a day. Otherwise they were of good habits, obtaining ample sleep, cleanly, and of a favorable family history. They are yet strong, and capable of great labor. Others living under similar conditions, accustomed to the mixing of their drinks, excessive use of tobacco, have long ago fallen by the wayside.

Many brewers have a vicious habit of drinking numerous glasses of beer before breakfast, and when such a one returns to his home for breakfast at six or seven in the morning his appetite is impaired. The sudden withdrawal of beer in a simple beer-drinker does not produce the violent nerve-agitation that occurs under the same conditions in the whiskey-drinker. He frets and longs for his beverage, but, soon used to abstinence, eats more heartily, becomes paler, and at no time is there marked irritability or peevishness.

Beer taken in moderate quantities under physio-

logic conditions produces plethora—a decided increase of red corpuscles; therefore, in anemia and impaired nutrition, I have found from one to two pints daily, taken with or after meals, or with a light lunch between meals, of decided benefit.

In the foregoing conditions I have, in conjunction with beer, given the tincture of the chlorid of iron, and especially have the results been striking in nursing women, in whom not alone was there an increase in the mammary flow but a richer milk and an improved appearance of the suckling. In a series of experiments I have given plain beer to a number of nursing women and then added iron in an equal number; comparative observations showed that there was in the latter number not only an improvement in the mother's milk, but also in the mother and in the nursling. In women debilitated by protracted nursing and in whom it seemed necessary to wean their babies in the early part of the summer, this treatment has made it possible to prolong the nursing through the hot months and has kept the mother in a fair condition, by reason of which she was able to secrete ample milk and give her child proper care. There is a quantitative and qualitative change in the milk, besides an improved condition of the mother. The quantity taken should be one pint per day for the first week, then two or more pints per day during the nursing period, with fifteen drops of the tincture of ferric chlorid to each pint of beer. Some women unused to beer find difficulty in taking this quantity, despite their intense eagerness to feed their young, but by icing it and drinking during meals tolerance and taste are acquired.

In the puerpera, when on the fifth or sixth day there seems to be a tardy flow of milk, I have ordered this treatment with advantage; and as late as the tenth day, when all hope of obtaining breast-milk had been abandoned, the beer was pushed, and, conjoined with the stimulating effect of the infant nursing, led to the secretion of a satisfactory supply of milk. In very fat women everything fails to stimulate the flow of milk, even a temporary increase due to the beer declining in a few days.

CLINICAL LESSONS.

Notes on Surface-Temperatures as Affected by Posture of Limbs.

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I REMINDED you last winter of the endless possibilities open to mere observation in clinical medicine, when pointing out the peculiarities of local temperatures in a case of erythomelalgia.

To become sure as to general temperatures in a case of disease is usually easy, requiring only ordinary care and good thermometers. But to get surface-temperatures accurately is a more difficult matter, demanding, as it does, more time, far greater care, and instruments that as yet are very unsatisfactory, either because they are too slow in registering, or too fragile. I commonly employ the coil-bulb thermometer, guarding the coil with a cork, hollowed so as to roof over the coil, and perforated to admit of the passage of the stem. The instrument must remain long on the part. It may be kept in place by a very thin caoutchouc band, split so as to be passed over the tube, and arranged so as to lie lightly around the limb with just enough pressure to keep it in place. Thus the pressure is kept the same, and in comparing the two members great care must be taken accurately to repeat this and other conditions. If the pressure be too great, it is sure to affect for a time the thin walls of the bulb, and then, as the instrument is lifted, the column instantly falls a little, this amount representing rise from excess of pressure. The coil-bulbs are less subject to this source of error.

The study of skin-temperatures has been fairly well made, but even yet may gain in accuracy and completeness. Moreover, there are some points as to normal temperatures rarely considered by neurologists in comparing the heat of symmetrical regions. Certain of these have come out clearly in the study made during the last year by me, and under my direction, by the staff of the infirmary, notably Dr. F. S. Pearce (late a resident), Drs. Taylor, Burr, and others.

Minute precautions are essential in dealing with minute differences, and in fact one may take it as a rule that the finer the instrument used the finer must be the human instrument using it. We still need a perfect surface-thermometer.

As the rise or fall in cases of local neuritis may be but slight, it is well to remember that normal differences as between right and left members are by no means uncommon. If, for illustration, in this healthy man at rest and supine, we apply the surface-thermometer and leave it at least ten minutes on the dorsum of the right foot, it notes 35.6° C., and on the left 35.2° C. Here is a fact of interest. The two feet are not always alike in temperature. At times the amount of difference is 1° C. Now let the man stand up, and with the thermometers in the same places they come to mark 35.4° C. and 34.9° C., respectively. This is one example taken at random. Meanwhile the mouth-temperature has remained unaltered. Certainly this is an interesting fact; it may have escaped notice.

Last spring, in a case of red neuralgia, we were measuring the temperatures of the feet in bed, and when hanging over the edge, or when dependent

from the hips, the man being on crutches. In the acute stage of this disease dependency of limb is apt to cause a rise of local temperature; but in the case in question, and perhaps in all, when the disorder has lasted long there is, under these circumstances, a fall of temperature and not a rise.

The fall in this case led me to study anew the natural thermal conditions, and after personally learning that the normal foot when dependent was likely to fall in temperature, I asked Drs. Taylor and Burr to test the matter. They both found the observation to be correct in themselves and in several of our nurses. I then asked Dr. Pearce, lately resident, to make a series of observations on the foot and hand. These have been done with care and skilfully varied. To save space I give these figures in tabular form.

In the following eleven experiments upon the *dorsum* of each foot (at the same time), the thermometers were read in twenty minutes, as the subject lay supine; then ten minutes later, the subject standing. The extremities were kept uncovered and away from draughts. The centigrade scale was used. The temperature of the room was 68° F.:

TABLE—EXPERIMENTS.

No.	Time.	Position of right leg.		Position of left leg.	
		Horizontal	Standing.	Horizontal.	Standing.
1	P. M.	35.6	35.4	35.5	34.9
2	P. M.	34.6	34.4	34.6	34.6
3	A. M.	33 6	32.8	33.6	32.4
4	A. M.	31.4	30 0	31.6	30.2
5[1]	P. M.	34.4	34.0	35 4	33.4
6	A. M.	34.8	33.2	34.0	33.2
7	Noon	35.0	35.0	35.8	35.6
8	P. M.	35.6	34.2	35 8	35.0
9	A M.	34.2	33.2	34.6	32.2
10	P. M.	33 6	31.8	34.0	32 4
11[1]	P. M.	33.6	31.0	34.2	30.4

The same conditions obtained in the following experiments upon the *soles* of the feet:

No.	Time.	Position of right leg.		Position of left leg.	
		Horizontal.	Hung over edge of couch.	Horizontal.	Hung over edge of couch.
12	A. M.	33.6	33.2	34.0	33.8
13	P M.	34.8	34.4		
14	P. M.	36.0	35.2		
15	A. M.	31.6	30.6	32 0	31.0
16	A. M.	30.8	30 4	29.0	29.0

The same conditions, the patient lying supine continuously:

No.	Time.	Palm of left hand.	
		Horizontal on couch.	Held up vertical.
25	P. M.	35.6	35.4
26	P. M.	34.6	34.2
27	P. M.	35.2	35.0
28	A. M.	35.6	35.4
29	A. M.	35.1	35.0
30	A. M. / P. M.	34.4	34.0

The conclusions that may be formulated as to surface-temperatures are as follows:

The temperature of the dorsum and sole of the feet is on an average from $\frac{2}{5}$° C. to 1° C. less when standing erect than when lying horizontally.

All things being equal, the morning surface-temperature is less than the evening surface-temperature on the dorsum or sole of the feet.

The mouth-temperature varies little as between lying down and standing; or if it changes there is a very slight rise.

The nearer the trunk the less do the surface-temperatures vary in different portions of the body.

The palms of the hands are the warmest parts of the extremities; their surface becomes less warm as the extremity is moved from a resting horizontal position to one of hanging down loosely, and finally to being held up in a vertical position.

The foregoing obtains whether the body lies supine or is held erect.

The two hands or the two feet vary somewhat in temperature in the same person under equality of conditions. At times the right member is warmer; at others it is the left.

[1] Experiments 5 and 11 were performed upon two old cases of erythromelalgia of the *left* leg in men twenty-one and thirty-four years of age respectively. All others were upon healthy persons.

ORIGINAL LECTURE.

BILATERAL CEREBRAL THROMBOSIS DUE TO SYPHILITIC ARTERITIS, WITH INCONTINENCE OF THE VESICAL AND ANAL SPHINCTERS.[1]

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I WISH to study carefully with you to-day the case of the man who is before us, as since his admission into the hospital it has presented several difficulties in regard to diagnosis. His history is as follows:

J. C., thirty-three years of age, a male laborer, of New York, but living in Colorado during the past three years, was admitted into this hospital July 11, 1893. His family history is unimportant, except for the occurrence of tuberculosis on his mother's side. His health was always good until four years ago, when he contracted a hard

[1] A clinical lecture delivered at the Arapahoe County Hospital.

chancre, but without secondary manifestations. After this his health seems to have been fairly good until about one month prior to the occurrence of the paralysis for which he was brought to the hospital. The symptoms premonitory of the paralysis consisted of headache and mental dulness for one month, and, for a few days immediately antedating the attack, dizziness. On the morning of July 11th (the day of his admission into the hospital), while he was sitting in a chair, his left side became paralyzed. He felt dizzy at the time, but he is quite sure that he did not lose consciousness. When he was brought to the hospital a few hours later, he seemed confused, but realized vaguely what was going on. His temperature was 98°, pulse 80, respirations 30, and there was incontinence of urine. He remained in about the same condition for four or five days, with normal temperature, total motor aphasia, and with complete paralysis on the left side, and nearly complete on the right side. At the end of this time he seemed brighter, and I had the following account of his condition recorded:

The mental condition seems to be good. The apparent mental dulness is partially caused by the motor aphasia, which is complete, as he is unable to utter the simplest monosyllable. The right leg is almost completely paralyzed. He is able to slightly flex and extend the right foot, but it is impossible for him to raise the foot from the bed. The flexors and extensors of the right knee and hip are extremely weak. Every muscle of the left leg is completely paralyzed and the knee-jerks are absent. The plantar reflexes on the right are slight, and for the great toe only, and on the left are absent. There is no ankle-clonus and the cremaster and abdominal reflexes are absent. The trunk muscles are weak, but not completely paralyzed, and the diaphragm acts well. The left arm and hand are entirely powerless; the right hand registers 48 on the dynamometer. The right-arm muscles are weak, but stronger than those of the leg. The deep reflexes are increased and most marked in the biceps muscle. The man has lost control of the sphincters of the bladder and anus. The muscles of the left side of the neck and face are paralyzed; those of the right side are weak. He is able to open and close the eyes and to frown. He can only protrude the tip of the tongue. Tactile sense, even over the external genitalia and around the anus, is well preserved. Although he seems a little slow in recognizing the contact of a substance, this delay may be only apparent on account of his inability to talk. The senses of temperature, pain, posture, and localization are normal, but the pressure-sense seems a little deficient on the right side. Smell, taste, and hearing seem nearly normal.

The right pupil is regular and normal in size, and reacts to light and in accommodation; vision is good and the fields are preserved; there is no disturbance of any of the external ocular muscles; vessels, disc, and fundus present a normal appearance. The condition of the left eye is about the same as that found in the right eye. On account of the loss of control of the vesical and anal sphincters, the tactile sense was repeatedly tested over the external genitalia and around the anal region, but it was always found normal.

A few days after his admission into the hospital his temperature, which had before been normal, rose to 101°, and remained above normal four or five days, one evening registering 102°.

The condition of the man from the time of his admission to the present has shown a gradual improvement, especially in the power of walking. His speech is very much improved, and the side that was totally paralyzed has gained considerable power, but the bladder has never entirely regained its function. He is able to control the sphincter ani, and sometimes for several days at a time he is able to control the bladder; at other times he is totally unable to prevent the bladder from involuntarily emptying itself.

I will examine him again to-day. He has fair power in the right leg, and uses it quite well. His gait is exceedingly awkward. The left leg is moved in a very ungainly manner, and in walking backward the left foot drags. He walks very much better forward than backward. The imperfect gait is due to muscular weakness and rigidity, and to lack of confidence in his ability to control his leg-muscles. You notice that his gait is different from that found in a person suffering from posterior spinal sclerosis. Whilst there is some incoördination in his gait, it is of a jerky character and is due largely to increased muscular irritability, and to contractures that have taken place in the flexor muscles of the legs, especially on the left side. He experiences little difficulty in standing with his feet close to each other, and on closing his eyes the difficulty is only slightly increased. Turning around makes him decidedly dizzy. The right knee-jerk is greatly increased, the left still more increased. On the left side several contractions of the rectus femoris muscle occur from once tapping the patellar tendon—a rectus-clonus. Ankle-clonus is absent on the right; present on the left. There is increased irritability, both of the anterior and posterior tibial groups of muscles on the left side, causing "paradoxical" contraction of the tibialis anticus when the left foot is forcibly dorsally flexed. The plantar reflexes on the right side are absent on the inner side of the foot and are slight on the outer; on the left they are nearly the same. The cremaster and lower abdominal reflexes are absent. The epigastric reflex is decided on both sides. The deep reflexes of the arms are slightly increased on the right side, and on the left are decidedly increased. The muscular power in the right leg is fairly good; in the left, rather weak. The dynamometer on the right registers, 130; on the left, 112, so that muscular power is pretty good, even in the left hand, with which he was unable to move the register of the dynamometer at all when he entered the hospital. The muscles of the face show but little weakness. The tongue is protruded fairly well now, although for several weeks he was unable to get it far beyond the teeth. The pupils react to light and in accommodation, and are equal in size. The sensory functions, including the special senses, are all preserved. His speech is perfect now, but his mental power is slow.

I wish to study this case with you somewhat in detail, as it presents many interesting features, both as to the seat and nature of the lesion. With the exception of headache and mental dulness, which antedated the paralysis for about a month, and dizziness, which immediately preceded the paralysis for only a few days, the man had always enjoyed good health, with the exception of syphilis four years ago, until the morning of July 11th, when,

while sitting in his chair, without apparent shock or loss of consciousness, his entire left side, including the face, became completely paralyzed. Just when the right-sided partial paralysis came on he is not aware, but it probably was almost simultaneous in its onset with that of the left side, as both sides were affected on his admission into the hospital, a few hours after his attention was attracted by the paralysis of the left side. He had incontinence of urine and feces, and was unable to speak, although he was conscious.

The question naturally arises: Where are the lesions situated that would give rise to these symptoms? Are they in the brain, the cord, or the peripheral nerves, or are all these involved? The paralysis of the left side of the face, and the paresis of the right side, as shown by his inability to protrude the tongue, and the affection of speech, demonstrate conclusively that the brain is involved.

What evidences have we of a cord-lesion? In all cases attended with incontinence of urine and feces due to central nervous lesion, unassociated with loss of consciousness or dementia, we naturally expect to find the lesion in the spinal cord.

We can exclude myelitis in this case, because the tactile, pain, temperature, muscular, localization, and posture senses are all normal. Tactile sense has repeatedly been tested over the external genitalia and around the anal region, and at each examination it has been found normal.

In poliomyelitis there would be no incontinence of urine if the case were uncomplicated; and what is of more significance, in excluding poliomyelitis, we have the presence of increased myotatic irritability in muscles that were, a few weeks ago, absolutely paralyzed, and are at present paretic. The absence of muscular wasting and the presence of electric irritability to the faradic current also aid in excluding poliomyelitis, as well as myelitis.

Multiple neuritis of alcoholic origin is occasionally attended with incontinence of urine, and perhaps with an increased knee-jerk, while, possibly, ankle-clonus may be present in some cases.

This man has been addicted to the use of alcohol, but he never drank steadily or heavily. One of the chief features of multiple neuritis is its symmetry. From the start this case has been asymmetrical. There has been absolute paralysis of the left side, including the face, arm, and leg, with incomplete paralysis of the right side. Other points against multiple neuritis even of alcoholic origin are: involvement of the trunk and face-muscles; the affection of speech, with inability to protrude the tongue; the absence of the psychical disturbances so common in alcoholic multiple neuritis; and the maintenance of muscular nutrition, which is never found in any case of multiple neuritis, no matter what its cause may be. The paralysis of multiple neuritis never comes on suddenly, as it has in the present instance, and this disease is usually attended with sensory perversion, all symptoms being most marked at the distal portion of the extremities.

After a careful review of all the symptoms presented by our patient, both now and throughout his illness, I feel justified in excluding multiple neuritis and disease of the spinal cord. Our patient must be suffering from multiple brain-lesions which are bilateral. Will bilateral brain-lesions account for all the symptoms presented by this patient?

One hemisphere of the brain controls the muscles of the opposite side of the body concerned in movements of a higher or more differentiated character, and, to a certain extent, the muscles on both sides of the body, which usually act in association with each other. The muscles that are most highly differentiated in their function from those of the opposite side of the body are those of the hand. The best types of bilaterally acting muscles are those of respiration, mastication, and those that move the eyes; therefore, a motor-paralyzing lesion of one side of the brain may cause absolute paralysis of the unilaterally-acting muscles of the opposite side of the body, and a slight weakness of the bilateral muscles of both sides. Such a lesion, unassociated with shock, unconsciousness, or mental disturbance of any kind, does not produce incontinence of urine or feces.

Sudden bilateral lesions of the brain occasionally occur, but they are usually unequal in their severity on the two sides of the brain. I see no reason for not attributing the incontinence of the sphincters of the bladder and anus to a bilateral brain-lesion.

Granting, then, that we have bilateral brain-lesions, it will be more convenient, in the present instance, to consider their location before trying to determine their nature. In all cases of sudden bilateral brain-lesions, our first thought is that the pons or medulla is implicated. The cranial nerves affected in our patient are the hypoglossal, making it impossible for him to protrude the tongue, and that portion of the facial, or seventh pair, distributed to the lower portion of the face. A sudden lesion in the nuclei of these nerves in the medulla must necessarily involve the nuclei of other cranial nerves, especially of the fifth, sixth, and eighth, adjacent to the facial nuclei, and of the ninth, tenth, and eleventh, which, are found close to the nuclei of the hypoglossal. Besides, such an extensive lesion must involve all the nuclei of the facial, thus affecting the upper as well as the lower portion of the face. Absolute paralysis of the same side of the face as of the body, with the upper portion of the face escaping, places the lesion above the middle of the pons. A lesion in the upper portion of the pons, causing paralysis of the opposite side of the body, will most invariably affect the fifth nerve on the side of the lesion, and when the lesion is bilateral in this portion of the pons, sudden and extensive enough to give rise to the extensive paralysis found in this case, it seems impossible for the fifth nerve to escape. A lesion in the crura would affect the third nerves, so that we may conclude that the lesions that have caused the symptoms presented by this man, are situated in the cerebral hemispheres. In the cerebral hemispheres, bilateral lesions, or a unilateral one, giving rise to motor paralysis on both sides, or on one side of the body, as the case may be, may occur in the internal capsule, in the centrum ovale, or in the cortex. Sudden occlusion of the large branches of the middle meningeal arteries on each side of the brain, sufficient to give rise to bilateral paralysis of the face, arm, and leg, would be attended by convulsions, profound unconsciousness, marked disturbance in temperature, and probably speedy death. It is rare, even in unilateral sudden cortical lesions, that they are so ex-

tensive as to involve the whole of one side of the body. Lesions of the centrum ovale, causing bilateral paralysis, are exceedingly rare. When they occur near the cortex they give rise to symptoms simulating those of cortical lesions, and when near the basilar ganglia, symptoms very much like those of lesions occurring from injury to these ganglia. It is not always possible to differentiate them; neither is it necessary for any practical purposes, except in a few rare instances. We must conclude, then, that the lesions in the patient whose case we are considering, are in the internal capsules, or in the white substance near them, but more probably in the former situation.

We shall next consider the probable nature of this man's lesions. For this purpose brain-lesions may be divided in regard to duration of onset into sudden, acute, and chronic. The chronic lesions that we need to consider to-day are morbid growths, aneurysm, and chronic abscess. The first two of these may be excluded by the history and the absence of optic-nerve inflammation and resulting atrophy. Chronic abscess is excluded from the history and the absence of a cause. The acute lesions are inflammatory in their nature, are several days, or longer, in reaching their height, and are attended by a rise in temperature. The absence of temperature-elevation, and the sudden onset of the paralyzing lesions in the patient before us, enable us to exclude inflammation. The onset of our patient's trouble was sudden, and the lesions reached their height in from a few minutes to a few hours. All such lesions, excluding traumatism, are vascular in their nature.

The diagnosis then rests between embolism, hemorrhage, and thrombosis. In young subjects the chances are in favor of embolism, as against hemorrhage, with the presence of endocardial disease or syphilis, except when the apoplectic symptoms are severe, especially with prolonged and profound coma. The less the primary disturbance of temperature, in the majority of cases, the less likely is the lesion of a hemorrhagic nature.

It seems to me that in all cases of sudden and extensive paralyzing lesions of the brain, not attended with unconsciousness and deepening coma, and with but slight disturbance of bodily temperature, a hemorrhagic lesion can be excluded. Slight hemorrhages may occur suddenly, with but little variation of temperature; so also may large, gradually-increasing hemorrhages take place without great affection of consciousness or bodily temperature at first. This man's paralysis was extensive from the first; therefore, from the symptoms that he presented at the time of admission into the hospital, we are justified in excluding hemorrhage. The age of the patient is more in favor of occlusion of a cerebral vessel than of rupture, but we must bear in mind that the youth of a patient is never very strong evidence against cerebral hemorrhage.

Gowers (*International Medical Magazine*, October, 1893) implies that a hemorrhagic brain-lesion in the substance of the brain in the young is always fatal. This may be so, but I think I have seen at least one exception.

Having excluded hemorrhage, we have left to consider embolism and thrombosis. We are not justified in diagnosticating embolism unless we can find a source for the embolus outside of the cerebral circulation. In the vast majority of cases of embolism the embolus is caused by an old or recent endocarditis, a vegetation washed from the endocardium or from the valves of the cardiac orifices.

In our patient there is no history of cardiac trouble, and on careful auscultation no murmur is found over the heart. We must remember that it is possible to have slight vegetations attached to the cardiac orifices, and yet no murmur be discoverable. This is most likely to be met with several months after the acute cardiac inflammation. But, even in such cases, there is commonly a history of heart-trouble. In certain profound blood-changes there may be a tendency to coagulation of the blood in distant portions of the body, and a clot thus formed may reach the brain and occlude one of the main arteries. The only blood-change in the patient before us is due to syphilis, but this has not been very marked, as his color seems fairly good. Having failed to find a source of embolism we are justified in excluding it. There are, however, two other reasons for dismissing embolism: the bilateral character of the lesions in the cerebral hemispheres, and the preservation of consciousness at the time of the occurrence of such extensive paralysis.

Excepting in cases of involvement of the basilar artery, the brain-symptoms from cerebral embolism are usually unilateral. When a vessel is occluded by an embolus, the occlusion takes place suddenly without premonitory symptoms, and if the vessel involved is a large one, consciousness is necessarily lost.

Having excluded the probability of hemorrhage or embolism in this case, let us see if the indications of thrombosis are sufficiently well-marked to justify such a diagnosis. Thrombosis is generally preceded by distinct premonitory symptoms. These were fairly well-marked in our patient, and consisted of headache and mental dulness for a month or more, and dizziness for a few days immediately preceding the onset of the paralysis. The occurrence of extensive paralysis without loss of consciousness is rather in favor of thrombosis than of embolism. The rise of temperature that occurred in this patient several days after his admission into the hospital, usually occurs in most cases of extensive occlusion of the cerebral arteries, due either to embolism or thrombosis.

Having arrived at the diagnosis of cerebral thrombosis, let us extend our inquiries further, to determine, if possible, the nature of this condition. A thrombus may form in one of two ways: first, by coagulation of blood in the vessel at the point at which the thrombus forms, from profound blood-changes, as in cases of marked anemia, great blood-deterioration from the syphilitic virus, and from vitiated blood-states from various other causes; and secondly, from changes in the walls of the vessels, also at the site at which thrombotic occlusion takes place. In considering the subject of embolism, we found no reason to suspect an undue tendency in this man's blood to coagulation; therefore, we must attribute the cause of the thrombosis to changes in the arterial walls.

There are only two forms of disease of the arterial vessels that favor occlusion of the arteries that go to the great ganglia at the base of the brain. These are atheroma and syphilis. Atheroma is essentially a senile change, and probably rarely, if ever, occurs in a person as young

as the man before us. We have, then, narrowed our diagnosis down to thrombotic occlusion of the arteries supplying the great ganglia at the base of the brain, and especially of those that carry blood to the anterior two-thirds of the posterior half of the internal capsules; and this condition we have seen is due to syphilitic disease in the walls of these vessels. The changes that take place in vessels affected with syphilis consist in gummatous deposits, inflammation, swelling, and in consequence a narrowing of the caliber of the vessel at the point affected. Often the inner surface of the vessel at the seat of narrowing is rough, and thus the formation of a clot at this point is still further favored. The most marked changes take place in the larger arteries at the base of the brain, but the lessening of the caliber of the vessels is most pronounced in the smaller arteries given off from the main branches. Sometimes the narrowing goes on gradually, almost to the point of occlusion of the caliber of the vessel, but finally complete occlusion by the formation of a clot takes place suddenly.

If you bear in mind the essential difference between embolism and thrombosis, it will not be difficult for you to account for the difference in the onset of the symptoms in the two processes of arterial occlusion. In embolism, up to the time of the lodgment of the plug in the vessel, the cerebral circulation had been perfectly normal, and no premonitory symptoms precede the arterial occlusion. In thrombosis, on the other hand, the arterial blood-supply to a portion of the brain has been gradually lessening for weeks or months, and premonitory symptoms, in proportion to the diminished blood-supply, are the result. In some cases these are slight, and unless diligent inquiry into the previous health is made, will be entirely ignored by the patient; whilst in other cases they are pronounced, and often consist of temporary numbness, paresis, or paralysis, with or without aphasia. Headache, mental dulness, and dizziness are often well-marked, as they were in our patient.

The result of thrombotic occlusion of a vessel is necrotic softening of the part supplied by the occluded vessel. When a large vessel is occluded, extensive softening will take place unless the circulation to that part of the brain is restored by collateral vessels. In the great ganglia at the base of the brain the nutrient arteries of these ganglia do not communicate with the arteries from the cortex, and in consequence, if the affected vessels are completely and permanently occluded, the softening will be complete, and the function of those areas of the directly-affected ganglia will be permanently lost. Fortunately, however, the vessels that are usually occluded in thrombosis at the base of the brain, in the neighborhood of the great ganglia, are often the smaller ones, so that the softening is not extensive. In all such cases the primary paralysis is more extensive than the permanent loss of power.

The prognosis in a case of thrombosis, other things being equal, is always worse when the trouble is bilateral than when it is unilateral. The immediate prognosis, or the chances of the patient escaping with his life, need not be considered here, as this man has passed this stage. What are the probabilities of his permanent recovery? It is unnecessary for me to go into all the elements that guide us in such an opinion, but let it suffice for the present for me to state that when ankle-clonus, exaggerated knee-jerk, and other evidences of increased myoatic irritability, with contractures of the flexor muscles of the extremities, are present, we have positive evidences of degeneration of the lateral columns of the cord, and neither a fair recovery nor marked improvement can take place.

The treatment of this case consists largely in making the man as comfortable as possible, encouraging him to go around on his crutches, but not allowing him to get fatigued; paying attention to the condition of the bladder, and trying to combat the affection of the arteries in order to prevent a recurrence of thrombosis.

In considering the treatment of syphilitic arteritis, it is necessary to bear in mind that the nodular deposits that take place chiefly in the outer and inner coats of the vessel are of slow and gradual growth, the caliber of the vessel being narrowed more and more, until finally the vessel is occluded by clotting of the blood in the diseased vessel. The deposition in the walls of the artery is a specific process, and to a greater or less extent is influenced by anti-syphilitic treatment, but the clot that finally occludes the vessel is a non-specific process, and is but little, if at all, influenced by mercury and potassium iodid. When thrombosis occurs in a syphilitic subject, the thrombus and the resulting softening take the same course in spite of active, specific treatment, that we find to occur in occlusion of a vessel from atheroma; therefore the outlook, so far as the brain-injury is concerned, is no better than in the case of a similar injury due to embolism, hemorrhage, or atheromatous thrombosis. Please remember that the occluded vessel or vessels in a case of thrombosis due to syphilis is not the only vessel diseased, but that in all probability many of the vessels at the base of the brain are similarly affected, but to a slighter degree. Your course of treatment then must not be an expectant plan, but you should endeavor to prevent other vessels from becoming occluded. The time when anti-syphilitic treatment is most effective, both in relieving the patient from present symptoms and in averting a hopeless paralysis, is when the premonitory symptoms first manifest themselves.

In what must this treatment consist? In the administration of mercury and potassium iodid only? No. I believe that we often fail in accomplishing the object of our treatment in syphilitic cases by sole reliance upon these two agents. We must remember that most persons who are suffering from the chronic effects of syphilis are in an impoverished state of health; therefore it is often necessary to administer iron, quinin, arsenic, together with the most nutritious food, in order to get the desired effects of mercury and potassium iodid. I have seen syphilitic subjects who had failed to improve after weeks of active treatment by these agents, begin to feel better, and lose one symptom after another on the same doses of potassium iodid and mercury that they had taken ineffectually for weeks before, after their general health had been improved by a tonic course of treatment. In syphilitic arteritis the large doses of potassium iodid that are so effectual in gummatous tumors of the brain are not only uncalled for, but they may be positively harmful by depressing the patient, impoverishing the blood, and thus favoring coagulation in the diseased arteries.

CLINICAL MEMORANDA.

A NOTE AS TO THE USE OF OXALIC ACID AS AN EMMENAGOGUE.

BY FRANK W. TALLEY, M.D.,
OF PHILADELPHIA;
INSTRUCTOR IN GYNECOLOGY, PHILADELPHIA POLYCLINIC.

THE use of oxalic acid in the treatment of amenorrhea was first suggested by Dr. F. Paulet, and afterward introduced into American literature by Dr. A. W. Marsh in an article in the *Therapeutic Gazette*, March, 1891. It is recommended that the drug be administered in half-grain doses, repeated every four hours, and it is described as a safe and efficient emmenagogue.

During the past twelve months I have used it with very gratifying results in a series of cases of amenorrhea presenting themselves for treatment at the Polyclinic and at the Pennsylvania Hospital. While I value oxalic acid as an emmenagogue, I cannot entirely subscribe to the conclusions drawn by Dr. Bloom in his article in THE MEDICAL NEWS of October 14, 1893. While an efficient emmenagogue and a capable abortifacient, oxalic acid is not to be regarded as a perfectly safe drug. I have in the last month met with a case in which toxic symptoms followed the ingestion of three doses of half a grain each repeated at about four-hour intervals. The patient was an anemic girl, twenty-two years of age, who gave a history of scanty menstruation and a complete cessation of her periods for three months. The uterus was not enlarged nor were there any of the signs of pregnancy. She was placed upon oxalic acid in half-grain doses, which she was directed to take after meals, largely diluted with water. After the third dose she was seized with vomiting, pain in the epigastrium, and became completely prostrated. The pulse was weak and rapid, and the extremities cold. She was placed in bed, external heat was applied, and the symptoms of collapse were soon overcome. She then complained of cramp-like pain in the hypogastrium and back. These symptoms were followed by an eruption upon the arms, trunk, and legs, resembling that of hives, which was still present seven days later and was attended with considerable itching. The symptoms gradually diminished in severity, the gastric symptoms being the most pronounced.

The action of oxalic acid seems to be directly as a stimulant to the uterine mucous membrane. It is, therefore, applicable to the treatment of amenorrhea of the anemic as well as of the plethoric type. Upon the pregnant uterus oxalic acid is capable of producing powerful uterine contractions which terminate in the expulsion of the product of conception. This was observed in two cases of early physiologic amenorrhea to which oxalic acid had been administered, the diagnosis of pregnancy not having been made.

Considering the fact, therefore, that oxalic acid, even when administered in fractional doses, is capable of producing toxic symptoms, and bearing in mind its powerful abortifacient properties, we should be guarded in recommending it as a safe remedy. I consider it a valuable drug in the treatment of amenorrhea, but one that should be given guardedly, carefully watched, and only prescribed when the diagnosis of pregnancy has been excluded.

FRACTURE OF THE BASE OF THE SKULL; RECOVERY.

BY GEORGE W. CRILE, A.M., M.D.,
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ON August 15, 1893, the subject of this report fell from a scaffold fifty feet high, striking on the back of his head. When found he was unconscious and remained so for five days. Blood and serum escaped from both ears for two weeks after the accident. There was intense pain in the left eye, and the lid could not be closed. The patient was taken to the Huron Street Hospital, where he remained for about two weeks. I first saw him in my service at the City Hospital two weeks after the injury. I found that the left eye could not be closed, that there was diplopia, some headache, and complete paralysis of the abducens and facial nerves, also paralysis of the sensory division of the trigeminus. Dr. Upson, who kindly examined the eye, found the fundus normal. The pupil was in a constant state of mydriasis. Hearing was somewhat impaired on the left side. The patient was thirty-seven years old, of good individual and family history, and there was no evidence of specific disease to be found. The diagnosis of fracture of the base of the skull rests on the history of the violent injury to the head, followed by the discharge of blood and serum from the ears for two weeks, and paralysis of certain cranial nerves. The treatment consisted in full dose of potassium iodid. After several weeks the paralysis disappeared, all the lost functions were restored, and the patient left the hospital apparently well. From the symptoms and the history I have made the diagnosis of pressure from blood-clot at the base of the brain on the nerves paralyzed. There is a point at which a clot might press on these branches and yet be comparatively small.

I do not insist on the causal relation of the treatment to the recovery.

NEW INSTRUMENT.

A SPIRAL OSTEOTOME FOR OPENING THE SKULL IN BRAIN-SURGERY.

BY M. H. CRYER, M.D., D.D.S.,
OF PHILADELPHIA.

DURING the past year the surgical engine, with its appliances, has been so greatly improved that its general use for bone-operations can no longer be questioned. The hand-piece has been enlarged, enabling the various cutting instruments to be more firmly placed, while room has been obtained for the attachment of guards of suitable kinds. The instrument can also be easily and quickly taken apart, cleaned, and made thoroughly aseptic. A velocity of from 10,000 to 12,000 revolutions a minute can be obtained, with great steadiness and regularity of speed.

One of the new appliances—a circular saw, having an adjustable guard for opening the brain-case—was used successfully lately in an operation performed at the Orthopedic Hospital by Professor W. W. Keen, for the removal of the Gasserian ganglion. The advantage gained by the use of this saw was the rapidity with which it cut, yet perfection seemed lacking, in that the mallet

and chisel had to be called into requisition for supplementary work. This case, as well as a series of carefully conducted experiments upon the cadaver, shows, however, that all danger of wounding the dura is not absolutely eliminated even by the use of the guard which is attached to the mandrel of the saw to prevent the penetration of its cutting-edge beyond a previously determined depth. The danger exists in the fact that brain-cases vary in thickness, and even the individual skull is thicker in some parts than others, thus making it impossible to accurately fix the guard.

A number of experiments have been carried out by the writer with the hope of overcoming the danger of wounding the membranes either with the saw or in the final cutting of the bone with the chisel and mallet, the latter adding materially to the shock, and not being free from the possibility of puncturing the brain.

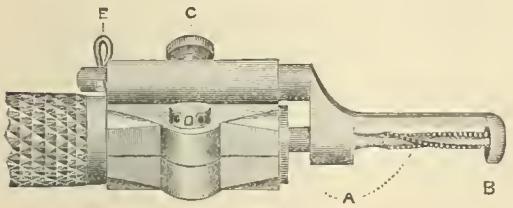
After many trials of variously constructed burrs, the following arrangement was hit upon, which seems to completely fulfil the requirements. The cutting portion of this "spiral osteotome" (Fig. 1) is one-half inch in length, one-eighth inch in diameter, and tapers slightly from base to point. By three spiral grooves, each

FIG. 1.[1]

Twice the size of cutting-tool.

having a turn of one hundred and twenty degrees through the half-inch from base to point of the cutting end, it is divided into three blades, giving it an appearance somewhat similar to a twist-drill. The effectiveness of these blades is enormously increased by a spiral

FIG. 2.[1]



Full size of instrument.

screw, forty-four threads to the inch, cut around the blades of the instrument. This device necessarily adds twenty-two teeth to the edge of each cutting blade. The individual teeth are so arranged with reference to one another that the cut made by one tooth is overlapped by that of the one next following, while the spiral arrangement of these teeth, in connection with the three spiral grooves, makes the burr perfectly self-cleaning, the débris being rapidly thrown out backward by the revolution of the instrument. The point of the burr when in use is guarded by a rounded, button-like attachment, connected with the nose of the hand-piece by means of a shank and collar, as shown in Fig. 2 at A. The free end of the burr is dowelled into a seat in the guard A, in which it revolves, which steadies the whole arrangement when in use, gives an added rigidity to the burr-shank, and holds the burr and guard in permanent relationship to each other.

It will be seen that the principle involved in the instrument described is simply that of a saw arranged to cut in a line with the axis of the shaft of the burr, and not at right angles to it, as in the circular saw. Such an arrangement allows of cutting in any direction and upon curved lines. This feature is especially valuable in resections of the brain-case, inasmuch as fenestra of any desired shape or size may be speedily made.

In operating for the removal of a portion of the brain-case with the spiral burr, after division of the soft tissues by the scalpel, a small opening is first made with a trephine mounted in the engine handpiece; this trephine has a diameter of five-sixteenths of an inch, and is passed completely through both tables of the skull, and the button of bone removed. There is no danger of injuring the dura with the trephine if it be carefully used. The opening thus made affords a means of entrance for the cutting burr, which, with its protecting guard, is next inserted in the opening, and the section made along the lines previously determined, by running the engine at high speed and forcing the bit laterally in the direction desired.

The button-like guard at the point of the burr absolutely prevents injury to the dura, which is pressed or dissected away by it from its attachment in the line of the cut as the instrument progresses.

The detailed description here given is of an instrument that I have called the spiral osteotome, which was designed for the special operation under consideration. Other instruments, simple modifications of this, would, of course, be needed, and could be easily made for other operations upon bone. A longer instrument, with or without a guard, could be used for resection of the long bones, of the femur, for example, in any part of its length, even at the head, while in the acetabulum. To remove diseased or nodulated bones of the nasal cavities, instruments of the same size, but with longer shaft and without the guard, could be made. Drills upon this fundamental type can also be made by lengthening and tapering the three spiral blades to a point, and large burrs of various shapes, by increasing the number of spiral-toothed blades in definite relation to the size of the cutting instrument required.

[1] For the privilege of using these illustrations we are indebted to the publishers of Dental Cosmos.

MEDICAL PROGRESS.

Fatal Intoxication with Hydrogen Arsenid.—MARTIN (*Medical Chronicle*, vol. xix, No. 2, p. 108) has reported the case of a foreman in a chemic works, thirty-one years old, who was made ill and vomited after having engaged for a half-hour or more in treating spelter or zinc bars with commercial hydrochloric acid, without adopting the usual precautions for carrying off the vapors generated. He attempted to go into the open air for a walk, but found himself unable to get about. He complained of pain in the head and abdomen and loins. The urine passed was dark, and sleep was disturbed by repeated vomiting. The eyes were suffused; the conjunctivæ and skin were stained deep-yellow; the respiration was normal; the pulse was rapid and irregular; the temperature was normal; the bowels had

not moved; but little dark opaque urine, resembling blood, had been passed; hiccough was at times severe and troublesome. The administration of a Seidlitz powder was followed by two dark slate-colored evacuations from the bowels. The symptoms continued for five days, gradually moderating, when on attempting to get out of bed the patient was seized with a convulsion, in which he died. A post-mortem examination could not be secured. Examination of the urine disclosed the presence of blood-corpuscles and their disintegrated remains; the spectroscopic reaction of hemoglobin and the chemic reaction of arsenic were obtained. The blood examined during life contained degenerated red corpuscles that failed to form rouleaux. A large proportion of arsenic was found in the hydrochloric acid that had been used, and only a trace in the spelter. It is noted that the symptoms present bore a close similarity to those of acute atrophy of the liver.

Arsenical Peripheral Neuritis.—At a recent meeting of the Clinical Society of Manchester, RAILTON (*British Medical Journal*, No. 1714, p. 996) presented a girl, ten years old, who had been under treatment for chorea of three months' standing. Fowler's solution of potassium arsenite was prescribed, and in three weeks the chorea was cured. Five drops were given three times a day for three days; ten drops three times a day for three days; fifteen drops three times a day for fifteen days, a total of thirteen and a half drams, equivalent to six and three-quarters grains of arsenious acid. During the continuance of the treatment the girl showed symptoms of gastric derangement, and two days after the withdrawal of the medication she was noticed to be desquamating freely. Ten days later she could not walk alone, and complained of pains in the arms and legs, the latter being particularly sensitive to pressure. When she put her feet down she felt "pins and needles." She was unable to button her clothes. The knee-jerks, which were active before treatment was instituted, were lost. The feet could not be flexed upon the ankles and if, supported, the girl attempted to walk, the soles of her feet were entirely visible from behind. The affected muscles in the legs displayed reactions of degeneration. There was distinct impairment of coördination. The urine was slightly albuminous. Of nine other cases treated similarly, seven had vomiting, one diarrhea, three herpes zoster, two erythema, and one peripheral neuritis, though not in so intense a degree as the case detailed.

Glycosuria During Infancy.—GROSZ (*Pest. med.-chir. Pr.*, 1892, No. 37; *Centralbl. f. klin. Med.*, No. 44, p. 951) has studied the urine of 50 nurslings between the age of one day and four weeks. This number included 24 healthy children, 1 premature child, 1 case of hydrocephalus, 14 cases of acute and chronic gastro-enteritis, and 10 cases of other forms of dyspepsia. Among the 50 cases the urine of 10 caused a reduction of Trommer's test with cupric sulfate. In 2 cases the results were confirmed by observations made with the polarimeter. These 10 cases included 7 of aggravated gastro-enteritis which terminated fatally, and 3 of mild dyspepsia. It is assumed that the glycosuria was of alimentary origin. Subsequent investigation disclosed the fact that the administration to infants of quantities of milk-sugar exceeding a given amount was followed by a reaction of the urine to Trommer's test. Healthy children bore a larger amount without change in the urine than children suffering from gastro-intestinal derangement. To this fact, and perhaps also to the influence exerted by the bacteria of the intestinal tract upon milk-sugar, it is thought the glycosuria observed in infants with deranged digestion may be due.

Lead-poisoning from Tea.—FREEMAN (*Lancet*, No. 3663, p. 1185) reports five cases of undoubted lead-poisoning and some half a dozen cases in which there were obscure abdominal pains and constipation without the presence of a lead-line, in three of which the source of intoxication was carefully looked for but could not be detected. In one case the tea used was examined, but with a negative result. Nine other cases presenting a well-marked blue line, as well as several others in which there were abdominal pains and constipation, coming under observation at a later period, the tea was again examined, and this time with positive results. Lead was found in varying amount, both in the loose tea supplied to some of the patients and in quarter-pound packets wrapped in lead-paper. In all of the cases abdominal symptoms were present, together with marked pallor, severe facial neuralgia in one, pains in the limbs in another, and gout in a third. In two or three cases there was vomiting, and in one or two diarrhea. In one case a relapse took place.

THERAPEUTIC NOTES.

Di-iodoform is the name given by MAQUENNE and TAINE (*La Semaine Médicale*, 1893, No. 66, p. 524), to a new antiseptic which is proposed as a substitute for iodoform. Chemically it is ethylene periodate, and consists of carbon, 4.62 parts, and iodin, 95.38 parts. It is insoluble in water, slightly soluble in alcohol and ether, but dissolves readily in chloroform, carbon disulphid, benzine, and hot toluene. It crystallizes in beautiful needles, quite distinct from the hexagonal plates of iodoform. If kept in the dark it remains practically odorless. The compound is an exceedingly stable one. It is prepared by treating acetylene periodate with iodin in excess.

In the Treatment of Pulmonary Tuberculosis, CARASSO (*Centralbl. f. Bakteriol. u. Parasitenk.*, B. xiv, No. 22, p. 719) recommends the continuous inhalation of mentha piperita, in conjunction with the internal administration of an alcoholic solution of creosote, with glycerin and chloroform, and containing 1 per cent. of mentha piperita. The most gratifying results were obtained in thirty-nine cases of pulmonary tuberculosis at various stages of the disease, the tubercle-bacilli disappearing from the sputum, the physical signs receding, and improvement in the general nutrition taking place.

For Neuralgia—.

R.—Ferri tartrat. . . . . gr. ij.
Quininæ sulphat. . . . . gr. ij.
Acid. tartaric. . . . . gr. ss.
Ext. nucis vomicæ . . . gr. ss.—M.
Ft. pil.
S.—Take one three times a day.

Practitioner, No. 306.

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THE PRIMARY ANEMIAS.

THE classification of the various forms of anemia on a scientific pathologic basis has of late been repeatedly attempted, though we must confess with little success. The great and substantial additions to hematologic knowledge encourage the hope that a satisfactory classification may soon be attained, but thus far they have only served to indicate the fallacies in existing schemes. The older text-books very carefully pointed out the features of what was known as simple anemia, and indicated the existence of a disease the essence of which was supposed to be a depraved condition of the blood. The first step in the direction of more complete knowledge was the removal of anemia from the list of independent diseases, and it is doubtful whether this term is now used by any authority of note, excepting in the clinical sense, as indicating a group of symptoms occurring secondarily in a variety of affections. The old anemia has thus given place to "secondary" or "symptomatic anemia," and a diagnosis is no longer complete until the underlying cause of the anemia and of the other symptoms is discovered. So far as the existence of an independent disease of the blood itself is concerned, a little reflection will show that such cannot be possible. The blood is a tissue in a limited sense only; for, though it contains living cells and a fluid intercellular material, the one great attribute of independent tissues, that of reproduction, is entirely wanting. It is therefore altogether dependent on other tissues, the blood-making structures, for its continued maintenance, and in turn a disease of the blood itself could exist only so long as the particular cells of the blood at the time of incidence of the disease in question existed, a period of time which has been variously estimated at from two to three weeks. It is evident, therefore, that a blood-disease must depend upon some pathologic condition outside the blood itself, which affects unfavorably the production or the destruction of the blood, decreasing the former or increasing the latter, or causing both at the same time.

In a certain sense, therefore, all forms of anemia are secondary or symptomatic, the actual disease being other than that of the blood itself; but the intimate relation of certain organs to blood-formation led to the separation from the ordinary secondary anemias of a group of anemias supposed to be due to disorder of the blood-making organs, and to the designation of such as primary or essential anemias. Very soon, however, it became evident from observation, as it had from a theoretic standpoint been obvious, that anemia might result from increased destruction of blood as well as from deficient production; and the classification of anemias as primary (in the sense of decreased production) and secondary lost some of its first attractiveness. The attempt, then, to separate the cytogenous, in which blood-making is at fault, from the hemolytic anemias, in which destruction is excessive, quickly suggested itself, but has thus far failed from the lack of definite knowledge; and it may be doubted whether such a division will ever be shown to be a natural one. Arbitrary distinctions and classifications will not stand the test of time in medicine any more than in other branches of science, and there is grave question whether or not a separation of cytogenic from cytolytic anemias would prove an advantage, even were we able to make the distinction.

The attempts, however, to determine this question have led to investigations into the ultimate manner of occurrence of anemia, which will surely bear rich fruit hereafter. Among these studies none deserves more careful attention than the recent work of DR. WILLIAM HUNTER on the physiology and pathology of blood-destruction (*British Medical Journal*, November 26 and December 3, 1892; London

Lancet, November 26, December 10 and 17, 1892). The well-known papers of the same author, published a few years ago, place him among the prominent advocates of the hemolytic nature of some of the forms of anemia, and his recent careful experimental work goes far to establish definitely some of his previous claims.

From the pathologic standpoint, progressive pernicious anemia has been looked upon as the most important form of anemia, as it is the most fatal; and the investigations into the physiologic pathology of this disease are therefore of prime importance. The theory of Prof. Pepper that alterations of the bone-marrow are the essential pathologic basis was an attractive one, and seemed to possess a considerable deal of evidence in its favor; but, as Henry pointed out, the medullary lesion is by no means a constant one, and this theory must therefore be abandoned. A next step in the study of the disease was the discovery of ankylostomum and bothriocephalus as the etiologic factors in certain cases; and a still more important advance, in certain respects, is the knowledge that the mucous membrane of the stomach and intestines is atrophic in other cases. Attention is thus directed at once to the gastro-intestinal tract for an explanation of this disease, and one naturally recalls the view of the late Sir Andrew Clark that chlorosis is primarily due to constipation and consequent copremia. Theoretically, one can readily conceive that the blood, exposed over a large surface in the gastro-intestinal tract, might, by the action of noxious agents within the digestive system, undergo destruction or hemolysis to an extent which no amount of normal hemogenesis could counterbalance, and there is certain proof of this. In the first place, there is evidence in this disease, in the abnormal pigmentation of the liver, in the high color of the urine, and in the microscopic features of the blood itself, that a high degree of hemolysis does occur. These facts draw attention at once to the liver and spleen as probable seats of the destructive process, with the result that abnormal pigmentation is found in the former, and no definite abnormality at all in the latter; but the existence of gastric atrophy or of intestinal parasites at the same time suggests a more intimate relation of the digestive tract with hemolysis than has hitherto seemed probable, despite the theoretic deductions of Sir Andrew Clark. It is in this connection particularly that we find the recent studies of Hunter of intense interest. He was able to show that the administration of toluylendiamin caused rapid destruction of the blood-corpuscles, first affecting those of the splenic vein, and when given in small enough doses affecting these alone. When, however, the spleen was extirpated there was evidence of hemolysis in the blood of the gastro-intestinal veins before that of the liver or other situations. It is needless to quote at length the experimental evidence brought forward, but we are inclined to give ready acquiescence to the conclusions of Hunter that the most active hemolysis takes place in the spleen, that the lymphatic and epithelial structures of the gastro-intestinal tract stand next, and in the absence of the spleen very largely assume this function, while in any case the liver is active only, or largely, in transforming or eliminating the hemoglobin and other substances set free in the spleen or digestive tract.

We are thus furnished with experimental evidence sufficient to indicate, if not to establish definitely, that the gastro-intestinal atrophy found in pernicious anemia plays a more important rôle than that of a result of the anemia, and that the intestinal parasites named affect the condition of the blood by increasing hemolysis, either through direct action on the normal digestive processes or by specially elaborated poisons, rather than by mere abstraction of blood, as has been held.

We may upon the same lines apply these thoughts to chlorosis, though in this disease the evidences pointing to active destruction of blood have been less accurately determined. Certain it is, however, that chlorosis and pernicious anemia are closely related in their ultimate pathologic nature, as cases of the former have been known to be transformed into the latter, and, perhaps, also the reverse. We are, therefore, far from ready to give accord to the classifications proposed, in which pernicious anemia is placed at one end of the scale, as being the most decidedly hemolytic form of anemia, while chlorosis is far removed and set down as a typically cytogenous form.

The clinical deductions of Sir Andrew Clark, while they have not as yet received the confirmation of experimental investigation, such as Hunter has furnished in the case of pernicious anemia, are not without an amount of indirect proof sufficient to establish their soundness, even though we are not prepared to go to the full length of their author in designating the intestinal disturbance as the essential cause of this disease. The anemic state induced by chronic dyspepsia, gastro-intestinal catarrhs, and constipation,

cannot certainly be laid to faulty cytogenesis as reasonably as to increased hemolysis, if the recent investigations of HUNTER be accurate, for, while there is an immediate and appreciable disturbance of the gastro-intestinal functions to explain the occurrence of hemolysis, the formation of blood could be interfered with only by the general reduction of systemic tone, a possibility far more remote than that which we assume to be present. We take it, therefore, that in both chlorosis and pernicious anemia, as well as in the various forms of anemia secondary to other diseases, hemolysis is an important factor; but at the same time we are not unmindful of the existence of deficient hemogenesis in the same diseases.

As HENRY has pointed out, it would be irrational to regard the large flabby megalocytes of extreme anemia as products of hemolytic change—and we may add also the nucleated red corpuscles in the same diseases. Both of these are doubtless results of disturbed cytogenesis; but we regard them in an indirect way as further proof of the great hemolysis going on at the same time. It is well known that a large hemorrhage speedily leads to the appearance in the blood of large, small, and nucleated red corpuscles, whose presence certainly is not to be ascribed to blood-destruction, but rather to efforts at rapid cytogenesis, resulting in the discharge of cells in an immature condition. The same conditions are doubtless present when rapid destruction of blood in the spleen or the gastro-intestinal tract takes place, and we are therefore inclined to regard both chlorosis and pernicious anemia as hemolytic and cytogenous at the same time.

The theory of VIRCHOW, that chlorosis is essentially a disease of blood-formation, due to congenital hypoplasia of the vascular system and of the blood-making tissues which have the same embryologic origin, need not therefore be abandoned, for it is quite likely that the hemogenetic function is sufficient in normal individuals to meet extraordinary demands, as well as the ordinary requirements of physiologic life, while in certain individuals this reserve force is wanting. It is, therefore, reasonable to suppose that persons of the type described by VIRCHOW would become chlorotic when active hemolysis occurred in the way we have indicated, or in other ways.

A similar thought might also be applied to pernicious anemia, as the bothriocephalus latus induces this condition in but a minority of the individuals infected, though the conditions are alike in all. In the case of ankylostomum, on the other hand, the pernicious type of anemia is much more frequent, as we might expect from the knowledge that this parasite occasions a considerable daily loss of blood in the intestinal canal, as well as serious disease of the mucosa, so that the number of individuals possessed of sufficient blood-making power would naturally be considerably smaller.

If, then, the view we have expressed—that chlorosis and pernicious anemia are due to active hemolysis, and at the same time deficient hemogenesis—be correct, it is apparent that the attempt to separate the anemias into groups, owning one or the other as their fundamental cause, must fail; and it is equally evident that the older classification of primary and secondary anemias is quite as fallacious. Our present knowledge of anemia strongly indicates that all forms are to be regarded as secondary conditions, and that the ultimate distinctions will be directed rather to the affections with which they are associated than to the type of anemia itself. In the case of the lymphadenopathies, attended with anemia, and which clinically manifest themselves as leukemia, Hodgkin's disease, or purpura hemorrhagica, this necessity for more accurate pathologic knowledge is still more evident. There is certainly a wide difference in the nature of those acute cases of leukemia, which, beginning abruptly in a manner entirely like that seen in infectious diseases, run a rapid course and terminate fatally in a few days, from the classic chronic leukemia in which infection is so remotely suggested, or from the cases which begin apparently as localized sarcoma, and subsequently invade widespread portions of the body. So, too, in the case of pseudo-leukemia, the determination of tuberculous lymphadenitis in some cases, and rapid infective disease in others, permits little doubt but that quite different diseases are manifested by the same or a similar clinical course.

It must be admitted that there is a great advantage for the present in retaining the old terms, and, indeed, this is necessary as we have arrived at no satisfactory classification of a different sort; but it is necessary at the same time to remember that when we speak of leukemia, or pseudo-leukemia, or pernicious anemia, or possibly also chlorosis, we use these terms in a clinical sense only, as we now speak of anemia as a condition and not a disease.

EDITORIAL COMMENTS.

Medicinal Preparations as Intoxicants.—The question is an interesting one as to where the line of law is drawn between a certain class of alleged medicinal preparations and intoxicants, so that a person may know when the one is put on the market whether or not it is in violation of the statutes with regard to the other. A recent Alabama case presented this point for adjudication. Here there was a "ginseng cordial" sold, which it was claimed was a medicine containing only sufficient alcohol to prevent fermentation. But the only evidence adduced in support of this theory was that "the mixture consisted of thirty parts of water, eight parts of alcohol, two parts of simple syrup, and ginseng and other roots and herbs possessing medicinal properties." On the other hand, an expert testified that he had analyzed the cordial, and found that the ginseng and other herbs it contained had no medicinal properties whatever; and the evidence further went to show that the cordial was not sold to, or used by, sick persons, but was sold to persons having no occasion for a medicine, and drunk by them, to intoxication, as a beverage. The decision of the Supreme Court of the State in the case, which is really what is of most interest in it, is to the effect that the word "intoxication," in its ordinary significance, means an abnormal mental or physical condition due to the influence of alcoholic liquors, a visible excitation of the passions, an impairment of the judgment, or a derangement or impairment of physical functions or energies. This, it says, implies a condition which would not result from the reasonable, ordinary, and moderate use of the most intoxicating liquors. Intoxication by means even of those liquors which the law itself recognizes as *per se* intoxicating, in general acceptance, is produced by their unreasonable, inordinate, immoderate, or excessive use, and to say that no liquor is intoxicating unless its moderate and reasonable use will produce inebriety is to declare that no liquor whatever is intoxicating. This cannot be, and is not, the test. The true criterion is that declared by Justice Brewer in the Kansas Liquor Cases. It is thus stated: "If the compound or preparation be such that the distinctive character and effect of intoxicating liquor are gone—that its use as an intoxicating beverage is practically impossible by reason of the other ingredients—it is not within the statute. . . . On the other hand, if the intoxicating liquor remain as a distinctive force in the compound, and such compound is reasonably liable to be used as an intoxicating beverage, it is within the statute, and this, though it contain many other ingredients, and ingredients of an independent and beneficial force in counteracting disease or strengthening the system."

Given that the particular compound will intoxicate, the question is not what quantity of it is necessary to produce intoxication, but whether the necessary quantity, however great or small, may reasonably be drunk. It is of no consequence that it may require from two to eight bottles of "ginseng cordial" to produce intoxication, if that quantity may be taken without other deleterious consequences than such as are incident to intoxication. If the quantity requisite to a state of intoxication may be safely used, it is a compound "reasonably liable to be used as an intoxicating beverage," within the statute. Upon no principle or reason can the quantity required to produce intoxication alone have any bearing on the matter, so long as the compound is agreeable to the taste and the necessary quantity may be safely taken.

Selfish Charity.—It is a sad fact that indiscriminate charity to the seeming unfortunate results usually in multiplication of the very misery the charity is supposed to lessen. Such charity hires criminals to make suffering. The "supply" will always rise equal to the "demand." In Croatia an organization of human fiends has been found whose business it was to mutilate children in order to exhibit them to excite compassion. The "deformity-market" was kept well supplied. The bones of children were broken, their heads crushed, their bodies twisted, bent, doubled, distorted in atrocious hideousness. In China the art has been carried to incredible extremes. "Wild men" have been created by transplantation of the skin of wild animals over the entire body, and teratologic monstrosities produced by causing inflammatory adhesions of the skin, *e. g.*, between a man and a boy. The production of Kaspar Hauser-like beings by confinement for years in the dark or in earthen jars was also practised. Such things are unknown in civilized countries, but when one gives money to "relieve distress" the probability is that he thereby encourages and doubles the wretchedness he would relieve. The only way to obviate this is by means of the charity organization societies. Indiscriminate medical charity is but a corollary of the same truth. There is poison in unearned bread, and drugs lose their physiologic reactions upon encouraged paupers.

Effect of Intoxication on Testamentary Capacity.—A man may habitually indulge in intoxicants, and yet possess testamentary capacity, the Prerogative Court of New Jersey holds, in the case of Fluck *vs.* Rea, if at the very time of the execution of the will he is able, and does, clearly comprehend the nature and effect of the business in which he is engaged. The rule in such cases is there quoted from Chief Justice Denio, of New York, and is in this language: "It is not the law that a dissipated man cannot make a contract or execute a will, nor that one who is in the habit of excessive indulgence in strong drink must be wholly free from its influence when performing such acts. If fixed mental disease has supervened upon intemperate habits, the man is incompetent, and irresponsible for his acts. If he is so excited by present intoxication as not to be master of himself, his legal acts are void, though he may be responsible for his crimes."

Moral Depravity does not Legally Establish Mental Insanity.—No reliable estimate of one's mental condition can be predicated upon isolated and independent acts. It is the entire line of conduct, each act examined with reference to that which preceded and that which followed it, that indicates whether the man is controlled by the dictates of sense and reason, or by the illusions of a disordered mind or imagination. And mere eccentricities of habits or perversion of feelings and conduct, forming what is termed "moral insanity," do not, it is held, constitute legal incapacity. The law recognizes the fact that proof of moral depravity does not necessarily establish a lack of intellectual ability.

SELECTIONS.

THE GREAT MEDICAL ERROR OF THE DAY.

In the treatment of the diseases of women at the present time there seems to me to be a tendency to lay too much stress upon lesions of the reproductive organs. Too little heed is, therefore, given to the nerve-element of woman's diseases, and, as a natural sequence, the surgical feelers and antennæ of the medical profession, always too keenly sensitive, vibrate vehemently at the approach of an ailing woman. This trend of the profession, to appeal to the knife as the great panacea for woman's diseases, is seen everywhere. It prevails alike in city, town, village, and hamlet. It asserts itself in every medical discussion, and stands out in bold relief upon the pages of every medical journal. It has caused many needless sexual mutilations and unnecessary operations, and it is, in my opinion, the great medical error of the day.

It comes, not so much from the glamor surrounding surgery, nor from the greed of gold, but from errors of judgment and from mistaken diagnosis. These arise from the fact that woman, through her sensitive and emotional organization, is a bundle of contradictions. More pitiful than man, and more long-suffering, her anger is more cruel and her jealousy more relentless. Feebler than man, an appeal to her affection will make her surpass him in sheer muscular endurance. Who can nurse her kin so untiringly, and with so little rest, as even a frail woman can? What father can equal a mother in fondling and soothing a sick and fretful child through the weary night-watches? What man can undergo the sheer fatigue, the strain and stress that a woman will for those she loves? Even in her pleasures, her physical amusements, she will, through keen enjoyment, often outtire the strongest man. In one word she is a creature of impulse and of emotion. But all nerve-strains, whether arising from the emotions, from the affections, or from the passions, have their reactions, and very strange and very misleading reflexes come from the loss of brain-control over insubordinate lower nerve-centers. For what is hysteria but nerve-misrule and the panic of the brain at incompetent control. The secret and sanctity of woman's inner life lies in her affections, and what disturbs them disturbs the nerves, and through them their environment of flesh and blood. These unruly nerve-lights flashing and fading at their own will, and without control, in the different organs of the body, the most careless observer may sometimes plainly see, for the clue is then as secure as the steps of a geometrical problem. But then again the symptoms are more frequently obscure. Often they are as misleading as the lapwing's flight. To construe such symptoms, to unfold their sense, and to paraphrase them, so as to gain a true conception of their character, often demands a deep acquaintance with human life and a keen insight into the most secret springs of its action.

Again, what is very perplexing, uterine symptoms are by no means always present in cases of uterine disease; and, what is still more bewildering, when so-called uterine symptoms are then present, they need not necessarily come from the uterine disease. The nerves are mighty mimes, the greatest of mimics, and they cheat us by their realistic personations of organic disease, and especially by their life-like imitations of uterine disease. Hence it is that even seemingly urgent uterine symptoms may be merely nerve-counterfeits of uterine disease. In fact, the time has come when we must give up the belief, which with many amounts to a creed, that woman is woman because she has a womb, and that the womb is at the bottom of nearly every female ailment.

Nerve-strain, or nerve-exhaustion, comes largely from the frets, the griefs, the jealousies, the worries, the bustles, the carks and cares of life. Yet, strangely enough, the most common symptoms of this form of nerve disorder in women are the very ones which lay tradition and dogmatic empiricism attribute to ailments of the womb. They are, in the usual order of their frequency, *great weariness*, and more or less of *nervousness*, and of *wakefulness*; inability to walk any distance, and a bearing-down feeling; then headache, napeache, and backache. Next come scant, or painful, or delayed, or suppressed menstruation; cold feet, and an irritable bladder; general spinal and pelvic soreness, and *pain in one ovary*, usually the left, or in both ovaries. The sense of exhaustion is a remarkable one; the woman is always tired; she spends the day tired, she goes to bed tired, and she wakes up tired; often, indeed, more tired than when she fell asleep. She sighs a great deal, she has low spirits, and she often fancies that she will lose her mind. Her arms and legs become numb so frequently that she fears palsy or paralysis. Nor does the skin escape the general sympathy. It becomes dry, harsh, and scurfy, and pigmentary deposits appear under the eyes, around the nipples, and on the chin and forehead. Blonds are likely to get a mottled complexion, and brunets to be disfigured by brown patches, or by general bronzing. Sometimes the whole complexion changes to a darker hue, and an abnormal and a disfiguring growth of hair appears on the face. There are many other symptoms of nerve-strain, but since they are not so distinctly uterine in expression, and, therefore, not so misleading, I shall not enumerate them.

Now, let a nervous woman, with some of the foregoing symptoms, recount them to a female friend, and she will be told she has "womb-disease." Let her consult a physician, and he, especially if she has backache, bearing-down feelings, an irritable bladder, and pain in the ovaries, will assert the same thing, and will diligently hunt for some uterine lesion. If one be found, no matter how trifling, he will attach to it undue importance, and treat it heroically as the erring organ. If no visible or tangible disease of the sexual organs be discoverable, he will lay the blame on the invisible endometrium, or on the unseeable ovaries, and continue the local treatment. In any event, whatever the inlook or the outlook, a local treatment more or less severe, is bound to be the issue.

Yet, these very exacting symptoms may be due wholly to nerve-strain, or (what is synonymous) to loss of brain-control over the lower nerve-centers, and not to direct or to reflex action, from some supposed uterine disorder. Neither, for the matter of that, may it come from some real, tangible, and visible uterine lesion which positively exists. Thus it happens that a harmless anteflexion, a trifling leukorrhea, a slight displacement of the womb, a small tear of the cervix, an insignificant rent of the

perineum, or, what is almost always present, an ovarian ache, each plays the part of the will-o'-the-wisp to allure the physician from the bottom factor. To these paltry lesions—because they are visible, palpable, and ponderable, and because he has, by education and by tradition, a uterine bias—he attributes all his patient's troubles; whereas a greater and subtler force, the invisible, the impalpable, and the imponderable nervous system, may be the sole delinquent. The sufferer may be a jilted maiden, a bereaved mother, a grieving widow, or a neglected wife, and all her uterine symptoms—yes, every one of them—may be the outcome of her sorrows, and not the outcome of her local lesions. She is suffering from a sore brain, and not from a sore womb.

Fortunately for my own reputation and for that of my medical brothers who have thus erred, this grave error of diagnosis is not without excuse. For, as has been shown, the symptoms of nerve-strain—the reflexes of grief, of love, of neglect, of remorse, of jealousy, and of unrest—so closely simulate those of even coarse uterine lesions that the nerve mimicries very readily may be mistaken for the symptoms of actual organic disease. Nor, indeed, are they always distinguishable the one from the other, for the marvellous kinship between mind and matter is a tangled skein unravelled yet by dead-house or by laboratory.

Let me illustrate this: Some years ago a healthy lady, aged twenty-three, was engaged to a gentleman whom she tenderly loved. The wedding day was named, the clergyman was notified, and the invitations were sent out. Three days before the one fixed upon for the marriage there came a letter from the man breaking off the engagement. The blow to her love and to her pride was, of course, great. She secluded herself in her room, and in a few days took to her bed with many symptoms of nerve-prostration, of which dysuria and an irritable bladder were the most prominent. For these vesical symptoms she was treated by the family physician with external and internal electricity and with repeated flushings out of the bladder. Getting no better, but steadily worse, the next year she fell into the hands of a specialist who diagnosticated anteflexion of the womb, cervical erosion, and fissure at the neck of the bladder. He dilated the urethra, washed out the bladder, and treated the womb *secundum artem*. Still remaining an invalid, she consulted a third physician six months later. He also dilated the urethra, examined the bladder with the endoscope, washed it out repeatedly, applied electricity to it by an internal electrode, and gave cold douches. No improvement following this treatment, she called in a fourth physician. He kept her several weeks under his care, dilated her urethra, and treated her mainly with electricity if I remember correctly, but of this I am not absolutely sure. At any rate, she was not made a whit better, and a fifth physician was summoned. He without success treated her for anteversion of the womb and rectal ulcer. She now saw her sixth physician. By this time her urethra had been dilated so frequently that, in the examination, his finger entered the meatus urinarius, and, not at first recognizing his mistake, he remarked upon the extreme narrowness of the vagina. He recommended the formation of a button-hole fistula in the urethra, but this advice was rejected. Four years after the beginning of her disorder she returned to the second physician whom she had previously consulted. After treating her heroically for some time without the slightest benefit, he proposed the excision of the bladder. This operation was refused, and she, one year later, drifted back to her sixth physician. He first made a button-hole fistula in the urethra. This failing to do any good, an artificial vesico-vaginal fistula was next tried. No benefit accruing from this operation, her ovaries, as the last resort, were removed, but peritonitis set in and she died. Now, what is the true interpretation of this sad case? The terrible shock to her pride and to her affections shattered her nervous system, and she was suffering more from the reflexes of a sore brain than from a sore bladder or from sore ovaries.

One more example for illustrating the influence of the mind over the body: A lady, after receiving the sudden news of her sister's death, began at once to throw up her food. Despite all remedies prescribed by the family physician, the vomiting persisted so stubbornly that she lost flesh, became weak, and menstrual disturbance set in. A consultant, recognizing the neurotic character of the disease, wished to treat it accordingly. Yet so impressed was she and her relatives by many so-called uterine symptoms, which they attributed to some disease of her reproductive organs, that they laughed at his diagnosis and dismissed him. Two specialists, therefore, were summoned separately, and each one independently of the other attributed the vomiting and her other symptoms to a tear of the neck of the womb, and advised an immediate operation. For this purpose she went to the private hospital of one of these gentlemen. Directly after her admission she was seized with such violent and uncontrollable vomiting that in a few days her life was in danger. First one eminent physician and then another was called in by the specialist, and the three were in constant attendance until, after a desperate illness, she became well enough only to be carried home. No operation whatever had been performed upon her cervix, for she had been too dangerously ill and was still too ill. She was now placed in the hands of her first consultant, who treated her nerves and her nerves only. Under this treatment she became well, wholly well, and has continued well ever since, although the cervical tear still exists. In one word, it was the old, old story of wounded nerves counterfeiting a wounded womb.

Strange as it may seem, the coccygeal joint is very liable to play the barometer to any kind of mental worry. The serious surgical blunder is, therefore, not infrequently made of extirpating for sheer hysterical coccygodynia this important bone, important from its muscular origins and insertions. I have known coccygodynia to attack a lady after the death of her mother. Every kind of treatment failed; but it was finally abruptly cured by her great resentment at the second marriage of her father.

The late Dr. Fordyce Barker told me of an analogous case caused by the sudden death of the gentleman to whom the lady was engaged. After consulting without benefit the best specialists at home and abroad, she led a sofa-ridden life, and did not stir from her house. She obstinately objected to surgical intervention, and the case seemed a hopeless one; but she was permanently cured by a lawsuit following a bitter family quarrel, in which she took a very active part. I have

not on my conscience the extirpation of a nervous coccyx, but this exemption is merely a piece of good luck, and not of good sense, as the following history will show: A highly intellectual lady, among many nervous symptoms suffered much from her coccyx. This she attributed to injuries sustained while she was riding a bucking horse. She was the patient of an eminent neurologist, who had cured her of all her symptoms but the coccygeal one. I was called in by him, and, after doing my best by topical applications, and by replacing a retroverted womb and dislocated ovaries, made up my mind that the trouble was a traumatic one needing surgical relief. The day and the hour of the operation accordingly were fixed upon; but before they were reached the pain mysteriously left the coccyx, never to return. A dominant mental impression—the fear of the operation—exorcised the coccygeal demon.

Once I was asked by a medical friend to see an exceedingly bad and acute case of pruritus vulvæ; the very worst that ever came under my observation. The lady was tossing about in her bed in a state bordering on frenzy from the intense itching, which could be allayed only by cold starch poultices applied every few minutes. Very naturally attributing it to uterine disease, my friend had discovered a small but angry-looking tear in the cervix, exuding a viscous discharge, and I was called in to the case to decide the question of an operation. I, too, was at first led astray; but the suddenness of the seizure, its vehemence, and the lack of consistency in the behavior of the symptoms, put me on my guard, and we soon found out the cause to be an attack of jealousy. This was a stubborn case to manage, but she ultimately recovered under isolation, massage, and heroic doses of asafetida.

Twice I treated a highly intellectual lady for attacks of pruritus vulvæ and of vaginismus. The itching was intolerable and the sensitiveness of the genitalia so acute as to forbid every attempt at sexual intercourse. Each attack was brought on by mental overstrain, from exacting literary work, and much domestic unhappiness ensued. Several cases, I have personally known, of ladies who had for months been treated for supposed uterine or ovarian disease, when their whole and only trouble was remorse at having had illicit intercourse or at having resorted to criminal abortion. I could spin out to an interminable length this list of cases illustrating the close and often very perplexing kinship between the brain and the reproductive organs, but time and space forbid, and these will suffice amply for my purpose.

For such cases as the foregoing ones moral therapeutics are needed, and we may here take a lesson from the ancients. They, recognizing the influence of the mind upon the body, successfully used incantations concurrently with medicines. Savages imitate them by their herb teas and sweat baths, made mysterious by the powwows of the wizard and by the thaumaturgic pranks of the medicine-man. The incantations used by civilized nations at the present day—and I name them with all reverence—are alms, vows, spells, charms, pilgrimages, exorcisms, Christian science, the faith-cure, the laying on of hands, and other like forms of moral therapeutics, which unquestionably have cured and will cure so long as they produce dominant impressions. The legitimate incantations of medical therapeutics are now pretty much limited to distractions, diversions, to travel in foreign lands, to isolation, to hypnotism, to massage, to electricity, and above all to the personal magnetism of the physician, however exerted, for this is the kernel of the treatment and the greatest of all incantations.

Sometimes in these cases an operation acts the part of an incantation. The dread of the knife and the shock of the operation distract the mental attitude of morbid concentration; while the enforced rest in bed gives a chance to the worn-out brain to regain strength and to assert its supremacy over the mutinous lower nerve-centers. This leads me to think that in a large majority of operations upon trifling tears of the cervix, and on incomplete lacerations of the perineum, the good which may accrue comes less from the repair of those organs than from the mental distraction and the enforced rest. But this kind of incantation—the surgical variety—does not always work well; indeed, it often, very often, makes matters worse. One striking example was that of a lady who saw her only child run over and beheaded by a locomotive. Her health began at once to fail, and she took to her bed with the hackneyed symptoms of weariness, wakefulness, a bearing down, an irritable bladder, and many other canonical uterine reflexes. These were attributed by an excellent and a conscientious physician to a torn cervix and to a torn perineum, which were accordingly repaired. But the added shock of the two operations made her very much worse. For these reasons I must confess to becoming far less inclined than formerly to operate on trifling lesions of the reproductive organs, and especially on small tears of the perineum, the repair of which is painful, unnerving, and generally of doubtful expediency. I have become very skeptical of the influence of such lesions upon the general health, and have come to the belief that even in bad cases it is greatly overrated. In my experience the mistake usually made in these cases is that of attributing to the lacerations the mock uterine symptoms of nerve-prostration. About this there can be no error, for I have over and over again, without any surgical treatment whatever, cured of all their ailments patients who had been sent to me for the very purpose of undergoing some operation on the womb, on the perineum, or even on the ovaries themselves.

Just as headache does not necessarily mean brain-disease, so ovary-ache, groin-ache, and backache do not necessarily mean ovarian disease. Nerve-strain and these aches are, it is true, correlatives, but the middle term which connects them is merely a disturbance in the circulation. Yet, time and again—and I say this deliberately—have ladies been sent to me to have their ovaries taken out, when the whole mischief had started from some mental worry. Their ovaries were sound, but their nerves were not, and no operation was needed for their recovery. The physician of the present day is too apt to jump from any distinctly female ache to an ovarian conclusion without the delay of any misgivings. The ache is in the back, then, he argues, it probably is ovarian; it is in the groin, then, of course, it is ovarian; it is in the head, but extremes meet, and surely it comes from the ovaries. I, indeed, have seen a painful nose and also a red one, attributed to the ovaries and treated canonically by the hot vaginal douche and uterine applications. From this widespread bias and pernicious

haste the removal of the ovaries has degenerated into a busy industry by which, in city and in country, very many women have been and are being mutilated, both needlessly and on the slightest provocation.

So misleading, indeed, are the symptoms of a jaded brain or of other nerve-strain, under the uterine guise in which they often masquerade, that when a jilted girl, a bereaved mother, or a grieving wife, consults a physician, he, unless on his guard, will be more likely to minister to a womb diseased than to a mind diseased. Such cases, even when associated with actual uterine disease, are not bettered by a merely local treatment. Nor are medicines by themselves of much avail. What they need are the incantations of the rest-cure, viz., massage, electricity, and strict seclusion. Hope should be infused into every case, and above all there should be imported into it the personality of the physician. The riper my experience the more am I convinced that in the treatment of woman's diseases the possibility of a nerve-origin or of a nerve-complication should be the *fore*-thought and not the *hind*-thought of the physician.—WILLIAM GOODELL, M.D., *in University Medical Magazine.*

PHYSIOLOGIC CHEMISTRY.

To physiologic chemistry, then, belongs the future. Closely related as it is to physiology, pathology, bacteriology, and general biology, it will tend to overshadow these, and the number of its students will be greatly reinforced from the ranks of those endowed with scientific curiosity, for, in one of its branches, that of the physiology and chemistry of the cell, a subject now developing into prominence, the investigator stands face to face with the mother of mysteries, and there is no student who would not give a lifetime of work to be able to lift a corner of the veil to behold her features.

In therapeutics, physiologic chemistry will be a modifying factor. At present we search the whole earth through for drugs to add to our list, and we discover new ones in our laboratory. Those that we take ready-made from Nature, as, for example, quinin, digitalin, etc., are, for the most part, excreted products of vegetable metabolism, whose presence and retention in the vegetable cell, like that of the nitrogenous products in the animal body, are injurious to life. In other words, we use the excreta or by-products of one kingdom to irritate or stimulate the organism in the other. Unless we believe that Providence ordained that vegetable organisms should produce such compounds to touch with exactness the springs of life within us, we may be excused from considering many of them as permanently placed in our Pharmacopeia. Were all the therapeutists of the present day to search for a drug which would benefit cases of pancreatic diabetes, would they ever find one which would replace exactly that physiologic compound whose absence in disease of the pancreas is the cause of the appearance of sugar in the blood? Is it possible to find a by-product of vegetable metabolism which will replace, when the thyroid gland is diseased or atrophied, that physiologic compound whose formation and presence in the normal thyroid gland prevents that deposition of mucin in the body which characterizes the disease myxedema? These facts and the possible advances in our knowledge of physiologic chemistry suggest how transient is the present character of our Pharmacopeia. At the present day we indulgently smile when an old wife gives a child a dose of castor oil or calomel for toothache, knowing how very indirectly the toothache is alleviated, if at all; but what a large number of drugs we employ whose action, contrary to what we suppose, may be as indirect as that of calomel in toothache!—PROFESSOR A. B. MACALLUM, Inaugural Lecture, University Medical Faculty, Toronto, October 3, 1893.

REVIEWS.

MANUAL OF BACTERIOLOGY, FOR PRACTITIONERS AND STUDENTS, WITH ESPECIAL REFERENCE TO PRACTICAL METHODS. By DR. S. L. SCHENK, Professor Extraordinary in the University of Vienna. Translated from the German (by the Author's permission), with an Appendix by W. R. DAWSON, B.A. M.D., Univ. Dubl., With 100 illustrations, partly colored. Pp. 310. London: Longmans, Green & Co., 1893.

THE rapidity with which new text-books on bacteriology are published is nearly equalled by the promptness with which those of Germany and France are presented to English and American readers in English dress. The volume before us is above the average in usefulness, and Dr. Dawson deserves credit for giving us an English version of Schenk's valuable treatise, rather than a new book of his own. For some ten years past it has been quite the proper thing for young medical men, after having taken a few months in foreign laboratories, to perpetrate on an unsuspecting and long-suffering public their more or less crude ideas of the "Essentials" and "Principles" of Bacteriology. It is time the fashion changed. Bacteriology is now old enough to furnish men and writers of experience, and young medical men would do well to follow the excellent example set by Dr. Dawson, in giving place and extended opportunity to the work of an experienced teacher. We have been accustomed to regard Prof. Schenk's book, in the original, as one of the best guides to the science of bacteriology for the physician and student. In its English dress it has lost nothing of its practical character and admirable plan, and has gained considerable in the notes and appendix of the translator. Numerous microörganisms, besides pathogenic bacteria, have received attention, the section on parasitic *protozoa* being particularly valuable, especially the references to their relation to carcinoma as the pathogenic significance of low forms of animal life has been to a considerable extent lost sight of by practitioners in the midst of the continuous fusilade kept up by bacteriologists.

In the course of translation Dr. Dawson has not always improved upon the involved sentences of the original German, and a number of minor errors are apparent to the finical critic; but the book is, on the whole, a good one.

ELECTRICITY IN DISEASES OF WOMEN, AND OBSTETRICS. By FRANKLIN H. MARTIN, M.D., Professor of Gynecology, Post-Graduate Medical School of Chicago, etc. Pp. 278. Chicago: W. T. Keener Company, 1893.

THAT electricity occupies an important place in therapeusis cannot be gainsaid, but that it is to be the pana-

cea that was fondly anticipated a few years ago, not even the least conservative can hope now. In fact, its utility as a therapeutic agent is daily becoming more restricted, and particularly has this been observed in the special line of the gynecologist. Dr. Martin's book, while unquestionably an able, and we must admit, a conscientious *résumé* of applied electricity in gynecology, is still sadly behind the times, and in addition contradictory in many points. For instance, in speaking of electro-puncture for fibroids of the uterus, on page 144, he says: "It should never be resorted to except in otherwise hopeless cases, cases in which the Battey-Tait operation or hysterectomy do not offer an average chance of success in the hands of expert operators," while on page 171 he very kindly admits that in the treatment of fibroid tumors of the uterus "there is still room for the scalpel," and goes on to say, that "about 75 per cent. of all fibroid tumors of the uterus, however, because of electricity should never be touched with a knife." What more direct contradiction than this! In these days of the scientific practice of medicine what can be meant by the term symptomatic cure? (Note pages 153, 155, 158, etc.) Surely the words *metritis* and *hyperplasia* cannot in anyway be construed as synonymatic, and yet we read on p. 190, "metritis and hyperplasia is caused, etc." While condemning the employment of electro-puncture in the treatment of extra-uterine pregnancy, the author recommends the application of galvanism for the same purpose. The distinction, to say the least, is fine, for in either case a dead product of conception is left in the woman's peritoneal cavity, subjecting her to the possibilities of septic absorption and peritonitis. Such a method of treatment can be neither scientific nor safe. A few illustrations like these must suffice. To render Dr. Martin due justice we must admit that his statements are much more conservative and moderate than those of most of the medical electricians of the day.

A MANUAL FOR BOARDS OF HEALTH AND HEALTH-OFFICERS. By LEWIS BALCH, M.D., Ph.D., Secretary State Board of Health of New York, etc. 12mo, pp. 242. Albany, N. Y.: Banks & Bros., 1893.

A VERY useful purpose has been accomplished by the compilation of this manual for health-boards and health-officers in the State of New York, in furnishing a practical guide for the use of all those engaged in the administration of the public health laws. One of the objects of the organization of State boards of health is the encouragement and supervision of the formation of local boards of health, so as ultimately to bring the entire State under local sanitary government, after the plan adopted in England with such good results. When these local organizations have been established, it is of the highest importance that they be governed by well-defined rules and regulations, so that there shall be uniformity of practice and concert of action. In conducing to this important object, the publication of Dr. Balch's manual is most opportune. It is also a useful book in the hands of the public, as it abounds in information upon subjects in which all are more or less interested. Whilst this book is an exposition of the public health laws of New York, and is designed more especially for use in that State, it may be consulted with profit upon matters of general sanitary law and practice which are applicable everywhere, and are not restricted by State lines.

It would be well if a book of this kind were published in every State, not only for its value as a manual for daily reference in administering sanitary affairs, but also for the assistance it will furnish in organizing local boards of health, and in guiding officials after organization has been completed.

CHIRURGIE DES VOIES URINAIRES. ÉTUDES CLINIQUES. Par le DR. E. LOUMEAU, Professeur Libre de Clinique des Maladies des Voies Urinaires, etc. Deuxième édition, revue, augmentée et accompagnée de cinq planches hors texte noires et chromolithographiées. 8vo, pp. 300. Bordeaux: Feret et Fils, 1894.

THIS is a very excellent book, dealing with a subject which has for a few years past been perhaps somewhat too much eclipsed by matters more novel and exciting. It presents a number of graphic clinical histories, with intelligent and well-considered comments. Of these articles, the most elaborate and important is a report of the accidental abscission of a large portion of the urinary bladder in the course of a celiotomy. There are recorded also a number of cases in which hydrocele, due to urethral narrowing, disappeared upon the correction of the latter. Several interesting instances of calculi and other foreign bodies are given.

The author is an advocate of internal urethrotomy in the treatment of stricture; he argues against the retention of a catheter after such operations. Our own experience is decidedly in favor of other methods, in the great majority of cases.

The scientific value of this work is enhanced by its admirable typography and by the beauty of the illustrations.

THE BACTERIAL POISONS. By DR. N. GAMALEÏA. Translated by E. P. HURD, M.D. (The Physicians' Leisure Library.) Detroit: Geo. S. Davis, 1893.

DR. GAMALEÏA has written a very interesting and readable little book, which we have read with a great deal of pleasure. He traces briefly the history of the study of bacterial poisons, and refers to the various theories successively advanced and abandoned. The latter half of the book is devoted to the consideration of the toxic principles discovered in tetanus, diphtheria, cholera, tuberculosis, and other diseases, and to the facts which have been learned regarding immunity and immunization.

TRANSACTIONS OF THE MEDICAL AND CHIRURGICAL FACULTY OF THE STATE OF MARYLAND. Ninety-fourth Annual Session, held at Baltimore, Maryland, April, 1892. Also Semi-Annual Session, held at Rockville, Maryland, 1891. Baltimore: Griffin, Curley & Co., 1892.

THIS report has suffered from two causes. In the first place, "on account of the scarcity of funds," it was decided "to omit the publication of all papers read before the Society, except the address of the President and the Annual Oration"; and in the second place the Annual Oration has failed of publication because "after a half-

dozen ineffectual efforts to obtain the manuscript of the annual orator they (the Publication Committee) despaired of their efforts." The result is that we have presented a transcript of the minutes of the two meetings and reports of officers and committees, together with the interesting and instructive address of the President, Dr. Wm. H. Welch, on "The Etiology of Acute Lobar Pneumonia Considered from a Bacteriological Point of View," which is a characteristically complete and reliable record of our knowledge upon this important subject.

Transactions of the American Electro-therapeutic Association. Second Annual Meeting, held in New York, October 4, 5, and 6, 1892.

No place or date of publication is given to this 12mo paper-covered book of 267 pages, and the table of contents is called an "index." There is no index. The contents show earnestness and enthusiasm on the part of some contributors, and on the part of others equal earnestness with more scientific knowledge and greater reserve. The subject to which the reviewer turned with greatest interest, is the important but very obscure one of that phenomenon variously termed "electric osmose," "kataphoresis," "anodal diffusion." We cannot say that any of the difficulties have been cleared away by the discussion, which is, however, entertaining and contains a few facts of genuine importance. The Association is doing good work, and after awhile, when its business committee feels strong enough to exclude unscientific and unbalanced contributions, its work will be still better. We cordially wish it success.

Mechanical Aids in the Treatment of Chronic Forms of Disease. By George H. Taylor, M.D. New York: George W. Rodgers, 1893.

The subject-matter of this little brochure of 109 pages is presented in five chapters: the first is taken up with a description of a postural or "lifting couch," the rationale of its mechanism and the indications for its employment; the second chapter deals with a chest-developer and its therapeutic uses; the third chapter takes up massage—its principles, varieties, factors, and adaptations; the fourth treats of the therapeutics of slow massage, auto-massage, and kneading; and the fifth presents the therapeutics of rapid (mechanical) massage, with a consideration of its different forms and effects.

Transactions of the Fourth Annual Meeting of the Medical Society of the State of Washington, held at Tacoma, May 3, 4, 5, 1893. Spokane: Willcox Printing Co., 1893.

This brochure of 153 pages is an indication of how far West progress has advanced, and reflects credit upon a body which, in the fourth year of its existence, has attained a membership of 110. The *Transactions* contains, in addition to the official report of the proceedings of the fourth annual meeting, sixteen papers on diverse interesting subjects. The regard in which the Code of Ethics is held is shown by its publication unabridged.

Hernia: Its Palliative and Radical Treatment in Adults, Children, and Infants. By Thomas H. Manley, A.M., M.D., etc. 8vo, pp. 231. Philadelphia: The Medical Press Co., Limited, 1893.

We find in this book absolutely nothing that is new; it is written in a style at once bombastic and slovenly, and is full to overflowing with errors of syntax, punctuation, and spelling, many of which are obviously not chargeable to the printer. It contains sixty-four woodcuts of various degrees of badness.

Medical News Visiting-list for 1894. Philadelphia: Lea Bros. & Co.

This familiar and standard visiting list appears annually in an improved form. The edition for the coming year, among many other attractive features, contains a catheter scale graded according to both the French and American systems, and a dose-list that includes all of the old and many of the newer remedies, such as sulfonal, ichthyol, and bromoform, that have survived the rigorous test of clinical experience.

The Physicians' Visiting-list for 1894. Philadelphia: P. Blakiston, Son & Co.

This standard visiting-list has been revised for 1894, and, besides the usual spaces and arrangement for visits, contains many valuable tables, memoranda, and convenient and useful helps for the busy physician.

SOCIETY PROCEEDINGS.

CINCINNATI ACADEMY OF MEDICINE.

November 7, 1893.

A CASE OF MALARIAL HEMATURIA AND ONE OF LEUKEMIA.

Dr. Whittaker presented first a case of hematuria, the obtrusive symptom being that the patient passed blood in his urine. He suffered in this way, he says, a number of years, and finally came to look upon the condition as an incurable malady. The urine showed an unusual amount of blood, and the patient, though a large man, was profoundly anemic. I at once entertained suspicion that it was a case of malaria, but though the patient declared that he had never had malarial fever, that is, that he had never had chills and fever, we examined his blood and found in it absolute evidence of malaria. We put him upon quinin and the hematuria began to disappear.

The case is exceedingly interesting as showing the exactness with which a diagnosis can be made from a drop of blood. I have also here three specimens of the urine. The tube on the extreme left contains urine discharged when he first presented himself; the tube in the middle, urine after treatment for one day, and the tube on the right, urine after treatment for two days. The first tube is black, the second brown, the third yellow. I do not wish to take up the time of the Academy with this case, for I have here one of even greater interest.

This gentleman was sent to my surgical confrère, Dr. Ransohoff, to be operated upon for the relief of an abdominal tumor. His history can be epitomized as one

of abdominal tumor with progressive marasmus. The patient became aware of the tumor and of the weakness at about the same time—in March, about eight months ago. The tumor was a mass in the left side of the belly. When I saw him first, a few days ago, he showed about the same appearance as to-day. Strange to say, he has rather the hue of health, and no one would consider him anemic. His face is full, the veins about the temple rather over-full, and his expression is cheerful. This tumor, which fills up and distends the left side of the abdomen, is very hard, yields no fluctuation, and bulges below. It seems to be the spleen. There is also a tumor in the region of the liver, which is apparently an enlargement of this organ. The lymphatics in the neck and groin are slightly yet distinctly enlarged. The patient has felt no pain in the region of the spleen, nor has he experienced any discomfort, except that connected with the mere fact of distention. There is no tenderness even on pressure. The legs show abundant pigmentation. The patient seems to be truthful, and he declares that he has had gonorrhea but has never had syphilis. Interrogated about hemorrhage, he recalls the fact that he had nose-bleed several times, first a year or so ago, and occasionally since.

In explanation of the tumor we had to consider syphilis, sarcoma, and leukemia. All that spoke in favor of syphilis were these spots on the legs. There was no other evidence to be found, unless the adenopathy could be so considered. Sarcoma could not be so lightly dismissed. The diagnosis of leukemia was favored by the history of nose-bleed and the enlarged glands of the neck and of the groin, the latter perhaps not more than twice their natural size. Against this diagnosis is the apparently healthy hue and condition of the man. It was, of course, impossible to go further into the study of the case without an examination of the blood. This examination was made by Dr. Greiwe, and he will report upon the condition, and show you some beautifully-colored specimens, after which, with the permission of the Academy, I shall continue my report.

DR. GREIWE said: The count of the red and white blood-corpuscles of this patient with the hemocytometer showed that there were only 2,480,000 red, the proportion of the white to the red being 1:3, whereas most writers give it as 1:355, and some 1 to over 800. Microscopically, the blood was not very pale, but it was sticky; the microscope showed that the vast majority of the white cells were the small leukocytes, next the large leukocytes, numerous eosinophile cells, blood-plates, and numerous nucleated red blood-corpuscles. One specimen is under the microscope, which verifies the diagnosis of leukemia. The white blood-corpuscles have been stained, and the red are only faintly outlined.

The report of this case shows not only enlargement of the spleen, but also enlargement of the liver; and, owing to that fact, I have brought down a specimen of a patient who died in Berlin of leukemia within eleven days from the onset of the trouble. I reported that case in the *Berliner klinische Wochenschrift*, and believe the history proved the case to be of long standing, although the patient considered himself perfectly well, until he was compelled to go to bed. In that case the spleen was enlarged as much as in this one. It had been diagnosticated as scurvy, but it proved to be a most remarkable case of lymphatic leukemia. Some authors have denied that it is possible, from staining the blood, to distinguish the various forms of leukemia, that is, whether it is splenic, lymphatic, or myelogenic, whereas others claim that it is possible from an examination of the blood to determine, from the character of the cells, which organ is most involved. Thus, one case that I reported was examined and pronounced one of lymphatic leukemia, although the enlargement of the lymphatic glands was very slight indeed. In another case I reported, in Berlin, the spleen extended into the pelvis, and could be distinctly outlined on the right side. That case, although it would likely be called splenic leukemia, showed all the features of the disease starting from the marrow of bone. The cells were characteristic of that. In this case, according to the statements of Ehrlich, Jaksch, and others, I should judge it to be a mixed form, that is, arising from both the spleen and lymphatic glands; but from the character of the cells, however, I would say the lymphatic glands are most involved, although the enlargement of the spleen is more marked than that of the lymphatic glands. The increase of the white cells is mainly due to the small leukocytes, and, next, to the large leukocytes. Some have a double nucleus, others a large nucleus. In making a diagnosis of leukemia from an examination of the blood, it is very important to bear in mind the character of the cells. There are cases that very closely resemble leukemia and yet are quite different. The cells of leukocytosis usually have more than one nucleus. That is characteristic of leukocytosis, and not of leukemia. The diagnosis is made from the abnormal increase of those which are not multinuclear.

DR. DEBECK: Upon examining the patient's eyes this afternoon, I found the fundus not especially pale; neither was I able to obtain the characteristic orange-yellow tint with the ophthalmoscope. That may be due to using ordinary gaslight, for I was not able to examine him by the electric light or by daylight. Both eyes show a neuro-retinitis. The arteries seem but slightly, if at all, narrowed, but the veins are considerably enlarged and exceedingly tortuous. The exudation is such that at many points the vessels are quite obscured. Particularly in the region of the disc I noticed the streaked appearance of the fundus which is characteristic of neuro-retinitis; but what is very characteristic in this case is the presence of minute hemorrhages. These are very striking, running along the course of the nerve-fibers. There is a peculiar condition to which attention has not before been called, with which we are perfectly familiar in embolism of the central artery. This is the cherry-red spot at the macula. It is probably simply a contrast appearance, the thin *fovea centralis* allowing the red to show through, and this appearance is heightened by the blurred retina about the macula. In the region of the right macula there are some larger hemorrhages, and just at the edges of the right disc is one of the characteristic minute round glistening spots to which attention has been called. The whole condition taken together gives quite a typical picture of leukemic neuro-retinitis, to which attention has been called by Liebreich, and of which a very excellent drawing is given in his *Ophthalmoscopic Atlas*.

With all of these changes vision in each eye is little below normal, although it is not 20/xx sharp.

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Dr. Stricker: I am very happy to have seen the fundi of this man's eyes, for I have never known a similar case, although I have read considerable on the subject and seen many ophthalmoscopic pictures. One feature, by which alone a diagnosis could have been made, is the hemorrhages. These take on a peculiar form, entirely different from that seen in any other form of hemorrhage, namely, a red ring with a white center; the white corpuscles congregate in the center, while the red corpuscles form a ring around them.

Dr. DeBeck has spoken of the cherry-red spot, seen in cases of embolism, directly in the macula. This is a contrast-effect due to the pallor of the retina, the red, shining through at the thin macular region, being due to the choroidal circulation. Here in the case before us the condition is quite different. There is an actual diapedesis of the corpuscles, white and red, through the vessel-walls, and it has never been properly explained why, in this form of disease, they should arrange themselves so peculiarly, all the red surrounding the white, which are grouped together. All this is found in no other ophthalmoscopic picture, and when seen is pathognomonic.

The papilla likewise shows a peculiar and interesting condition. It is swollen, edematous, and in many places covers the vessels which pass out from it; but, above all, it has a paleness that is never present in papillitis. This is likewise due to exudation of large numbers of leukocytes, which have caused the swelling of the papilla and give it its peculiar choked appearance.

Dr. Kramer: With this blood there can be no doubt of the diagnosis of leukemia, but I would like to suggest sarcoma of the spleen as a possible cause of the leukemia. A number of cases of so-called idiopathic leukemia have upon post-mortem examination revealed sarcoma of the spleen. I particularly recall a case of well-marked leukemia that occurred in the service of Dr. Forcheimer at the Children's Hospital almost six years ago. Transfusion was practised in this case with no benefit, and post-mortem examination revealed multiple sarcoma of the spleen. I think a little weight would be lent to this diagnosis in the present case by the size of the tumor, and I should like to have the gentleman who presented the case discuss the differential diagnosis.

Dr. Langdon: The case calls to our mind the exactness with which a diagnosis may be made by means of the microscope and other instruments of precision; still I think we are likely to be misled even with them. The only case of leukemia I ever saw was in consultation with Dr. D. D. Bramble, of this city. Briefly it was as follows: A man, about thirty-two years of age, was suffering with an apparently enlarged spleen. An examination of the blood showed white blood-corpuscles present in the proportion of 1 to 20 of the red. An autopsy in that case revealed a large spindle-celled sarcoma involving the psoas muscle and extending into the spleen, so that it was continuous with it, and the spleen itself was enlarged. The remark by the previous speaker, that these symptoms may be due to multiple sarcomata, recalls the fact that the sarcoma need not be multiple. The tumor in the case I have spoken of was probably as large as a child's head, and a microscopic examination showed it to be a spindle-celled sarcoma. This man had even the spongy gums and the scorbutic tendency, and was markedly anemic, while he did not have the enlarged lymphatic glands. The diagnosis there was leukemia, which was evidently due to irritation of the spleen by the sarcomatous tumor. The tumor was not very movable, but it was quite large and had involved the surrounding parts to a great extent.

Dr. Greiwe: The subject of sarcoma being brought up in this case, I would like to refer to a case reported by Dr. Ayres. It was a case of tumor of both orbits, and from an examination of the specimen we concluded that it was a form of sarcoma. While I was looking up the literature of that case I came across the report of a case by Dr. Dock, of Ann Arbor, who found a distinct leukemia a few days before death, with all the characteristic appearance of white corpuscles in the blood. In this connection it remains to be said that the true nature of leukemia is entirely unknown. By some it has been referred to as a sarcoma of the blood.

Dr. Ransohoff: It was supposed in this case that the kidney was affected. I found that it was the spleen, and believed the case one for the medical clinic. Subsequently I looked at the spots referred to rather carefully, and they impressed me as not like the spots from poison-oak or ivy, but rather like those due to syphilis. The man had a number of these scars on his arms, and he also had enlargement of the posterior cervical glands, which is so characteristic of latent syphilis. So that, notwithstanding the fact that this patient tells us he has not had syphilis, I am of the opinion that the disease is at least of syphilitic origin. The scars are quite characteristic, and the fact that he has improved on potassium iodid leads me to believe the syphilitic theory is justifiable. We still, to a certain extent, must rely upon therapeutic tests. Sarcoma, I agree, is possible, but I think it hardly probable. In the first place, it is a very rare condition in this situation, and then we hardly expect to find so uniform an enlargement. The spleen usually has one or two notches in its border, and despite its enlargement these can usually, indeed almost invariably, be felt. I have never been able to find them in the patient. If it is a sarcoma and not a leukemic spleen, it, of course, should be operated upon, and the sooner the better. Cases have been reported in which complete recovery has followed removal of the spleen. If this is a leukemic spleen, of course, operative interference is out of the question. Patients usually die after the removal of a leukemic spleen. They die from the shock, and perhaps half of them die on the table. I think, in fact, only one case has been reported which recovered after the removal of a leukemic spleen, and even this has been doubted.

Dr. Whittaker: We have now had the whole subject illuminated. The diagnosis is made absolute by the examination of the blood, while the symptoms, the epistaxis, spleen-tumor, lymph-abdomen, and marasmus, take their places orderly in the course of this disease. Two allied conditions were mentioned in this study, leukocytosis and pernicious anemia, one a benign, the other a malign process. There is a great difference between a leukocytosis, and a leukemia, and that is the first thing to bear in mind in studies of the blood. A leukocytosis we welcome. It occurs, as a rule, in typhoid fevers and in pneumonia at the time of the crisis, which it is supposed to bring about by liberating

antitoxins. We try to produce this leukocytosis, artificially if possible, by the process of chemotaxis. A leukocytosis is an increase of the white blood-corpuscles, but by no means to the degree of that of leukemia. One c.mm. of blood contains five million red to from five to ten thousand white corpuscles. This is the normal ratio, but the proportion varies greatly even in health. It may be 1 : 400. It may be even 1 : 50 and not be truly pathologic. It is when the disproportion is greater than this, 1 : 40, 1 : 20, 1 : 10, or as here 1 : 3, that the condition is pathologic. But if we should think that this disease, leukemia, is simply an increase in the proportion of white blood-corpuscles, we make a great mistake. When an individual, the victim of leukemia, is bled, the red blood-corpuscles are restored just as in an individual not leukemic, but only up to the previous number; not to the natural number. That shows us that there is something that affects the whole blood, holding, as it were, the blood-making functions down. Leukemia is, according to the present belief, some kind of an infection. Those studies are interesting that try to show whether the disease arises in the bone-marrow, in the spleen, or in the lymphatic glands. These things have yet, however, not the same interest as the determination of the cause of the condition. One marked change in many of the cells is their immobility. It would appear as if they were dead, while in leukocytosis they are alive. It is said that there is no case in which the bone-marow is not affected, although it is, of course, affected in some cases more than in others. Tenderness of the bone is not noticed even in myelogenic cases. It must be remembered, too, that the lymphatic glands are often affected on the inside of the body and not on the outside.

Pernicious anemia distinguishes itself by poikilocytosis, by deformities of corpuscles, and defective arrangement, as well as by absence of lymphadenoma and tumor of the spleen, and more rapid progressive degradation. Leukemia occurs in the course of malaria, tuberculosis, rickets, syphilis, traumata, anxiety, and depressing emotions, and oftener independently of discoverable cause.

A number of rapid cures of leukemia, hitherto considered incurable, have been reported recently from Scotland, under large doses of arsenic. I will try in order in the treatment of this case, quinin, potassium iodid, methylene-blue, and arsenic, and report the results, or show the patient again.

NEWS ITEMS.

The Association of American Medical Colleges.—At a meeting of the Faculty of Rush Medical College, held December 7, 1893, the following resolution was unanimously adopted:

Resolved, That Section 5, Article III, of the Constitution of the Association of American Medical Colleges be amended to read as follows: "From students who intend to graduate in 1899 or in subsequent classes, four years of medical study and an attendance upon four annual courses of lectures of not less than six months' duration each, will be required. Provided, that graduates of literary colleges who have taken a course of four years, including study in the natural sciences, and graduates from universities and colleges that furnish a suitable course of scientific studies, graduates of schools of pharmacy that require three years of study and adequate preliminary education, and graduates of dental colleges requiring two years of study and adequate preliminary education, may be admitted to the second year's work or course of lectures in the college without examination."

The present wording of Section 5, Article III., is as follows: "Candidates for the degree of Doctor of Medicine shall have attended three courses of graded instruction of not less than six months each, in three separate years."

The adoption of the proposed amendment will require of all matriculates of the session of 1895 attendance upon four full courses of instruction before receiving the degree of M.D.

Recognizing that the proposed amendment, if adopted, would necessitate the formulation of a general curriculum of study for the various branches of the courses, and, perchance, other necessary changes or additions to the by-laws, the President of the Association of American Medical Colleges, Dr. N. S. Davis, has appointed the following-named persons to act as a special committee to prepare a new schedule of minimum of requirements, to be submitted at the fifth annual meeting, to be held at San Francisco, at 3 o'clock P. M., Wednesday, June 6, 1894: E. L. Holmes, Chairman of the Committee, President Rush Medical College, Chicago, Ill.; Reginald H. Fitz, Harvard Medical College, Boston, Mass.; Victor C. Vaughan, Dean Department of Medicine, University of Michigan, Ann Arbor, Mich.; Wm. Osler, Johns Hopkins Medical College, Baltimore, Md.; Wm. E. Quine, President College of Physicians and Surgeons of Chicago, and President Illinois State Board of Health; P. S. Conner, Ohio Medical College, Cincinnati, Ohio; Dudley S. Reynolds, Hospital College of Medicine, Louisville, Ky.; N. S. Davis, Jr., Chicago Medical College; Perry H. Millard, Dean College of Medicine and Surgery, University of Minnesota, Secretary Association of American Medical Colleges, St. Paul.

The committee will hold a meeting in Chicago, at the Grand Pacific Hotel, at 3 o'clock P. M., Wednesday, February 7, 1894. Colleges that are members of the Association are requested to aid the committee in its work by advice or representation. It is particularly desirable that colleges that are members of the Association should be represented by a formally appointed delegate at the forthcoming session. The proposed amendment, if adopted, marks a most important era in the history of medical education in this country. Colleges unable to be represented by a regularly appointed delegate will confer a favor by informing the Secretary of their attitude on this amendment, to be submitted or made known to the convention before final action is taken. Colleges electing delegates are requested to indicate in their credentials if they have full power to act, and to furnish the Secretary the names of the delegates elected as soon as practicable. Colleges are entitled to one delegate each. A proxy cannot be delegated to a person not directly connected with the college desiring representation.

There are at present seventy-one colleges members of the Association of Americal Medical Colleges.

The constitution cannot be altered or amended except

after written notice to all the members at least thirty days previous to a stated meeting, and by a vote of two-thirds of all the delegates present at such meeting.

August Martin, heretofore docent, has been made Professor of Gynecology and Obstetrics in the University of Berlin. The honor thus conferred is an eminently deserved one.

Dr. Russell Reynolds has been elected president of the Royal College of Physicians, of London, in succession to the late Sir Andrew Clark.

Books and Pamphlets Received.

A Text-book of Physiological Chemistry. By Olaf Hammarsten. Authorized Translation from the Second Swedish Edition and from the Author's Enlarged and Revised German Edition. By John A. Mandel. First edition. New York: John Wiley & Sons, 1893.

Open-Incision Tenotomy, with Report of a Case in which the Tendon was Sutured by the Anderson Method. By James F. E. Colgan, A.M., M.D. Reprinted from the Therapeutic Gazette, 1893.

The Medical News Visiting-List, 1894. Thirty Patients per Week. Philadelphia: Lea Brothers & Co., 1893.

Outlines of Obstetrics. A Syllabus of Lectures Delivered at the Long Island College Hospital. By Charles Jewett, A.M., M.D. Philadelphia: W. B. Saunders, 1894.

I. The Demands for Sterilization. II. A New Combination Sterilizer for Asepticizing Simultaneously Water, Instruments, and Dressings. By Frank J. Thornbury, M.D. Reprinted from the New York Medical Journal, 1892.

Report on Rectal Diseases. By W. O. Green, M.D. Reprinted from the American Practitioner and News, 1893.

Clinical Notes on Chancre of the Tonsil, with Analysis of Fifteen Cases. By L. Duncan Bulkley, A.M., M.D. Reprinted from the Transactions of the Medical Society of the State of New York, 1893.

Treatment of Sterility in Woman. By Dr. De Sinéty. The Physician's Leisure Library. Detroit: George S. Davis, 1893.

Report of the Commissioner of Education for the Year 1889–90. Vols. I and II. Washington: Government Printing Office, 1893.

A Case of Extirpation of the Uterus *per Vaginam* for Epithelioma of the Cervix, Complicated by Sarcoma of the Body. By D. W. Montgomery, M.D. Reprinted from the Occidental Medical times, 1893.

Some Cases of Leukoplasia. By D. W. Montgomery, M.D. Pamphlet. San Francisco, Cal.: W. A. Woodward & Co., Printers.

Myxedema: Its History, Etiology, Pathology, and Treatment. By J. Lindsay Porteous, M.D., F.R.C.S. Reprinted from the American Therapist, 1893.

Laws Relating to Public Health Passed by the Ninth General Assembly of the State of Colorado. Denver: The Smith-Brooks Printing Co., State Printers, 1893.

Varicocele, with a Report of Nineteen Radical Operations, and the Different Ways in which They were Done. By B. Merrill Ricketts, M.D. Reprinted from the New York Medical Journal, 1893.

A Case of Carcinoma of the Tongue, Extending after Two Partial Extirpations to the Alveolus; Partial Excision of the Lower Jaw; Partial Excision of the Tongue; No Recurrence after Three and One-half Years. By Bayard Holmes, B.S., M.D. Reprinted from the Chicago Medical Recorder, 1893.

A Comparison of Artificial and Natural Gastric Digestion, Together with a Study of the Diffusibility of Proteoses and Peptone. By R. H. Chittenden, Ph.D., and G. L. Amerman, Ph.D. Reprinted from the Journal of Physiology, 1893.

The Outlook for Medicine. By Bayard Holmes, B.S., M.D. Reprinted from the University Magazine.

A New and Safe Method of Cutting Esophageal Strictures. By R. Robert Abbe, M.D. Reprinted from the Medical Record, 1893.

The Surgery of Gall-stone Obstruction. By Robert Abbe, M.D. Reprinted from the Medical Record, 1893.

Tubal and Peritoneal Tuberculosis. By Reuben Peterson, M.D. Reprinted from the American Journal of Obstetrics, 1893.

Transactions of the Medical Society of the State of New York, for the Year 1893. Published by the Society, 1893.

The Treatment of Chorea by Large Doses of Quinine. By W. A. N. Dorland, M.D., and Charles S. Potts, M.D. Reprinted from the University Medical Magazine, 1893.

The Annual Report of the Department for the Insane of the Pennsylvania Hospital, for the Year Ending Fourth Month, 19th, 1893. Philadelphia: Spangler & Davis, 1893.

The Retrospect of Medicine. A Half-Yearly Journal Containing a Retrospective View of Every Discovery and Practical Movement in the Medical Sciences. Edited by James Braithwaite, M.D. Vol. CVII. January–June, 1893. (Issued July, 1893.) London: Simpkin, Marshall, Hamilton, Kent & Co., Limited. Edinburgh: Oliver & Boyd. Dublin: Hodges, Figgis & Co., and Fannin & Co. Leeds: W. Brierley.

Periodic Paralysis, with the Report of a Case. By Charles W. Burr, M.D. Reprinted from the University Medical Magazine, 1893.

Second Annual Report of the State Medical Examining Board of Washington, 1893. Olympia, Wash.: O. C. White, State Printer, 1893.

Dott. Vincenzo Allara. Il Magnetismo negli Animali e nelle Piante. Milano: Casa Editrice Galli di Chiesa e F. Guindani, Galleria Vittorio Emanuele, 1893.

The Theory and Practice of Medicine, Prepared for Students and Practitioners. By James T. Whittaker, M.D., LL.D. New York: William Wood & Co., 1893.

Hysterical Women: Trials, Tears, Tricks, and Tantrums. By A. W. Thornton, M.D. Chicago: Donohue & Henneberry, 1893.

Chloroma and its Relation to Leukemia. By George Dock, M.D. Reprinted from the American Journal of the Medical Sciences, 1893.

Necrosis of the Palatine Process of the Superior Maxillary Bone; Removal of a Sequestrum Representing Much of the Bony Floor of Both Nasal Chambers and a Part of the Septum; Recovery without any Deformity. By E. B. Gleason, M.D. Reprinted from the Medical Bulletin.

Transactions of the American International Medico-Legal Congress. Held at Chicago, August 15–17, 1893.

Observations Based on an Experience with Nearly One Thousand Cases of Typhoid Fever. By James B. Herrick, M.D. Reprinted from the Journal of the American Medical Association, 1893.

Diuretin. By James B. Herrick, A.B., M.D. Reprinted from the Journal of the American Medical Association, 1893.

A Contribution to the History of the Discovery of Modern Surgical Anesthesia, with Some New Data relative to the Work of Dr. Crawford W. Long. By Luther B. Grandy, M.D. Reprinted from the Virginia Medical Monthly, 1893.

The Class of Cases in which We May Expect Good Results from Excision of the Membrana Tympani and Ossicles. By S. McCuen Smith, M.D. Reprinted from the Therapeutic Gazette, 1893.

Saunders's Question-Compends. Essentials of Minor Surgery, Bandaging, and Venereal Diseases. By Edward Martin, A.M., M.D. Philadelphia: W. B. Saunders, 1893.

The Wilder Quarter-Century Book. A Collection of Original Papers Dedicated to Prof. Burt Green Wilder at the Close of His Twenty-fifth Year of Service in Cornell University (1868–1893). By some of His Former Students. Ithaca, N. Y.: Comstock Publishing Co., 1893.

Sarcoma of the Pons, and Glio-sarcoma of the Cerebellum. By Ludwig Hektoen, M.D. Reprinted from the Journal of the American Medical Association, 1893.

Minor Surgery and Bandaging. By Henry R. Wharton, M.D. Philadelphia: Lea Bros. & Co., 1893.

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ORIGINAL ARTICLES.

THE RELATIVE FREQUENCY OF FIBROID PROCESSES IN THE DARK-SKINNED RACES.

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IN stating that the color of the skin is but a minor point of difference between the white-skinned and dark-skinned races, one gives expression to a fact that must have impressed itself upon every observer who has had much to do with the two races. One need have but a limited experience in this connection to enable him to note many and important variations, and, while both races have probably developed from the same primitive ancestor, the development has been along different lines, and has resulted in two distinct types. Some forty years ago this matter was the subject of much controversy in the medical journals of that period, but the scientific aspects of the question were obscured by its political and sentimental sides. The time was not then ripe, but I think we have now reached a period when we can consider this question without passion. We have, in this subject, a field of pathology exceedingly interesting, but little worked, and wholly our own. We owe it to ourselves, not less than to science in general, to give a good account of our stewardship in this matter. It is important that this be done now, as, with changed environments and changed conditions, the types of disease are changing, and their characteristics should be fixed as soon as possible.

It shall be my endeavor, in this contribution, to point out a few of the differences between the two races, and to try to show that the characteristic pathologic difference between the two is the remarkable tendency to fibroid processes to which the dark races are subject.

The negro differs from the Caucasian anatomically, physiologically, and pathologically. The comparative anatomy of the two races has never been systematically studied, and it is a matter for congratulation that the Association of American Anatomists has taken this question in hand and has issued a circular asking that practical anatomists give their attention to it, and keep a careful record of all variations and anomalies. Many isolated facts, however, have from time to time been put on record, and these fragments show that much may be expected from a more extended and careful study. It must be premised, however, that the pure negro type is exceedingly rare in this country, and on this account observations as to agreements and contrasts are very difficult owing to the comparative infrequency of typical specimens. The larger the admixture of white blood, the closer the approach in every way to the Caucasian type.

Among others, Parker[1] has noted, in two among thirty-three negro brains examined by him, the existence of an internal *pli du passage*, as well marked as in any of the Simiadæ. This convolution has been uniformly present in all the Simiadæ thus far examined, except two, but prior to Parker's discovery, it had never before been found in man in a fully developed condition, and its absence had been regarded as a distinguishing characteristic of human as compared with anthropoid brains.

Baker[2] regards a perforation of the olecranon fossa, found in South African and other low tribes, as a reversion toward the anthropoids. He also describes bands of deep cervical fascia which alone remain to testify to the former existence of the *levator claviculæ*, a muscle present in most mammals, and one which he has frequently found almost complete in the negro. In the pithecoid apes the rhomboid muscle extends to the occipital bone, and in anthropoid apes to the spinous process of the fourth cervical vertebra (Broca). In a negro of Mozambique, Chudzinski[3] found this muscle to extend to the third cervical vertebra, and in another negro subject to the spinous process of the fourth cervical vertebra. The same observer also notes[4] the presence in the negro of an independent fasciculus to the deltoid muscle, a characteristic of the primates.

The psoas parvus is another muscle present in nearly all mammals except man. Theile considers its absence to be the normal condition in man, stating that he found it only in one of twenty bodies in which especial search was made for it. Holden gives its frequency of occurrence as once in ten subjects. From a considerable experience in the dissection of colored subjects I am able to state that the absence of this muscle in them is the exception, and its presence, on both sides, and well developed, is the rule. There is no difference as regards the two sexes.

The osteologic peculiarities of the negro have been fairly well investigated. The skull is prognathous, with a facial angle of from 65° to 70°.

The parietal bones are thick. The zygomatic arches are wide, and the upper edge of the orbit projecting. The pelvis is long and narrow, the iliac bones less wide and more vertical. The tibia and fibula are more convex, and the os calcis is continued in a straight line with the other bones of the foot. The scapulæ are shorter and broader. The thigh and arm are rather shorter. While the leg is actually about the same in length, it is relatively smaller, owing to less average stature. The forearm is longer, both actually and relatively. The foot is an eighth, and the hand a twelfth, longer than in Europeans. Humphry's tables are as follows:

	European, average of 25	Negro, average of 25	Bosjesman, average of 3	Idiot, in Berlin Museum.
Height	65 inches	62 inches	54 inches	57 inches
Middle point of skeleton,	Symphysis pubis	1 in. below pubis	Symphysis	Symphysis
Length of spine	22.2	19.3	17.0	19.5
Circumference of skull,	20 5	19.8	19.6	13 5
Humerus	12.7	12 1	10.8	12.0
Radius	9.2	9.4	8.3	8.8
Hand	7.3	7.7	6.0	7.0
Femur	17.88	17.0	15.0	16.0
Tibia	14.4	14.4	12.9	12.5
Foot	10.6	11 11	7.5	8.5
Pelvis, transverse diameter of,	5.2	4.6	4.4	5.0
Pelvis, antero-posterior diameter of,	4.3	4.1	3.5	3.8

Or, reduced to a scale of 100:

	European.	Negro.	Bosjesman.	Idiot.
Height	100.00	100.00	100 00	100.00
Length of spine	34.15	31.13	31.48	34.21
Circumference of skull.	31.54	31.94	36.29	23 68
Humerus	19.54	19.52	20.00	21.05
Radius	14.15	15.16	15.37	13.43
Hand	11.23	12.42	11.11	12.28
Femur	27.51	27 40	27.78	28.07
Tibia	22.15	23.23	23.89	21.92
Foot	16.03	17.90	13.78	14.96
Pelvis, transverse diameter of,	8.00	7.42	8.15	8.94
Pelvis, antero-posterior diameter of,	6.61	6.61	6.48	6.66

It is probable that many other anatomic differences between the two races exist, which have escaped observation, owing to lack of attention. My own observation is, that in the negro the brain is relatively smaller, the liver larger, the lung-capacity smaller, and the vascular area greater. Enough has been shown, I think, to demonstrate that the anatomic variations in the colored race are neither few nor unimportant, and it is hoped that, the attention of American anatomists having been drawn to this subject, many new facts may be recorded.

The dominant physiologic peculiarity of the negro is the lessened sensibility of his nervous system. By this is meant a less acute response to external impressions. His ability to resist severe and prolonged exposure to the sun's rays is well known. As has been stated, the capillary circulation in the negro is believed to be relatively greater than in the white, though this belief lacks the confirmation of sufficient and accurate observation. If it be true, it is remarkable that this fact, in connection with a black skin and more numerous sweat-glands, tending as they all do to a more rapid cooling of the body, presents a condition so well adapted to existence in hot climates. The evolutionist will see in this the adaptation of the animal to its environment, and the acquirement of means necessary to resist external factors hostile to its continued existence. On account of this blunted sensibility of the nervous system the negro bears surgical operations remarkably well. He seldom suffers from shock, and wounds of all kinds heal with a quickness and certainty delightful to the surgeon. The mortality from capital operations is remarkably small. Possibly a part of this exemption may be explained on hygienic grounds. The comfort and good food of a well-regulated hospital, to the majority of patients of this class, are a decided improvement upon their ordinary surroundings and mode of life. But this explanation will not cover all cases, and, indeed, this recuperative tendency has been noticed under circumstances where the objection could not be urged. Given a white and a black man, taken, as far as possible, from similar hygienic surroundings, and let each be subjected to a similar operation, say the amputation of a leg, other things being equal, the white man will die and the black recover.

As is well known, the emotional side of the negro is well developed, and there is in him a certain tendency to fatalism which leads him to accept accidents and illness, with all their consequences, as parts of the inevitable, and to be borne without murmuring, as the dispensations of a higher power against which it is useless to struggle. But this trenches on the domain of psychology, and is foreign to the purpose of this essay.

In the matter of susceptibility to disease there is a marked difference between the two races. Of course, they touch at many points, and many of the seeming differences may be reconciled on the ground of different hygienic conditions; but after due allowance for errors of this description, there yet remains a body of fact valuable to the pathologist and anthropologist. My own experience in practice among the two races will warrant the following conclusions:

Tuberculous diseases are rife among the colored people. To such an extent is this true that I now make it a rule to ascribe to tuberculosis any obscure process in them not otherwise determinable. Whenever I have been able to secure post-mortem demonstration in this class of cases I have generally found myself correct in my supposition. Particularly is this true of tuberculous peritonitis. Scrofula numbers many victims, and rickets is not unknown. Pneumonia is exceedingly fatal, a fact first noticed during the late Civil War, and confirmed many times since by numerous observers. Between July 1, 1875, and June 30, 1890, there were reported in the District of Columbia,[5] 1020 deaths from congestion of the lungs. Of these, 521 were among white, and 499 among colored persons. When it is considered that the white population is a little more than twice as large as the colored, the significance of these figures becomes apparent. In other words, had the number of each been equal, the mortality would have been 998 colored to 521 white. During the year 1890 the deaths from pneumonia, in the same locality, numbered 416, of which 181 were among white and 235 among colored, being in the proportion of 1.065 to 1000 for the former and 2.937 to 1000 for the latter. The per mille rate from all diseases of the respiratory organs during 1890 was 1.905 in the white, and 5.175 in the colored, while that from tuberculous diseases generally was 2.558 and 6.825, respectively. These figures speak for themselves.

Hemorrhoids and rectal diseases are very infrequent in the colored race. Diseases of the skin are about as common as in the whites. Also, there is not much difference in the matter of the zymotic diseases. The negro enjoys a remarkable immunity from affections of the nervous system, but according to Witmer and some other authorities, the proportion of insane is increasing rapidly. This is ascribed to the changed conditions under which the negroes are living since the abolition of slavery. It is probable, however, that the lack of accurate statistics before the year 1880 precludes any certain conclusions in this respect, and more time must elapse before generalizations are possible. Chorea is almost never seen, and I cannot recall a single instance of locomotor ataxia in this race. The arcus senilis is very common and is developed early, often at forty years of age. Pterygium is almost universal. Among 138 colored persons examined for this affection I found it in 102.

The negro shows a remarkable freedom from malignant disease. Epithelioma is almost never seen, and carcinoma but rarely. In a recent number of THE MEDICAL NEWS, Kelly notes several cases of epithelioma of the cervix uteri seen in colored persons, one of whom seemed to be a negress of perfectly pure blood. Sarcoma is the most frequent of the malignant neoplasms in negroes, a fact upon which I desire to lay especial stress, and to which I shall allude again later.

These opinions, based on my own observations, coincide in the main with those of such good observers as Tiffany,[6] Briggs, the late Christopher Johnston, and others, as expressed, in 1888, in a paper and in the discussion before the American Surgical Society. The greater facility in the healing of wounds possessed by the colored race has not escaped the attention of foreign observers who have been brought in contact with them. Thus Hillary,[7] an English surgeon who served with the colored troops during the late Civil War, noted this fact as a result of his experience among both classes of troops. After the war, he went to Canada and thence to Jamaica. In the latter locality his experience as to the more rapid healing of wounds in the blacks was confirmed. He also noted the fact that it was necessary to tie a greater number of vessels in an amputation in the case of a black than in the case of a white. After considerable study of the question he states it as his conviction that the circulation in the dark races is more branching and capillary, and that this relatively greater vascularity will explain the greater facility in the healing of wounds. This opinion coincides with my own observations.

Coming now from general to particular considerations, I desire to state as a pathologic axiom that fibroid processes are relatively more frequent in the dark races, so much more so, in fact, as to constitute a racial peculiarity. By fibroid processes I do not mean the physiologic fibrosis incident to advancing years, nor yet that form in which the parenchyma of an organ is encroached upon by an interstitial connective-tissue hyperplasia. I desire to confine the term to those processes the essential characteristic of which is growth, and which for the most part depend upon changes caused by inflammation, and which, as a rule, have some external injury as a starting-point. As the element of heredity seems to enter largely into these changes, perhaps the term "fibroid diathesis" may be admissible as expressing the inherent tendency to this class of changes.

There are three diseases which, by common consent, are considered as peculiar to the dark-skinned races. These are elephantiasis Arabum, keloid, and fibroma, or myo-fibroma, of the uterus. In addition to showing that these are peculiarly diseases of the dark races, I propose to show that they are true fibroid processes, and incidentally to consider their pathology with a view to determining their points of agreement and difference.

That elephantiasis Arabum is a disease almost indigenous to the dark races has been recognized for many years. As early as 1726, Richard Towne,[8]

in the last chapter of his little work, affirms this fact and discusses the pathology. Sir Joseph Fayrer[9] is a different sort of pathologist from Richard Towne, but his testimony is not less emphatic. He states that no race is exempt from the disease, but that the white races undoubtedly suffer less from it than the dark. It does occur, he says, though very rarely, in the pure European in India, more frequently in those of mixed descent, most frequently in the native. He observes that it will frequently be found that when it occurs in persons of apparently European parentage there will be found an admixture, however slight, of dark blood. This is strong language, and, coming from so experienced and careful an observer, should be convincing. But there is other evidence to the same effect. Other English observers who have noted this same tendency are Richards,[10] Hillary,[11] Oldfield,[12] and Daniell.[13] Among American observers, J. B. S. Jackson,[14] in giving an account of his voyage to Barbadoes, alluding to Barbadoes leg, states that it is more common among the blacks, even allowing for the differences in proportion of the two races. Prof. James C. White's[15] opinion is that the black race is especially predisposed to elephantiasis, the growth often attaining an enormous size.

Dr. Rufz[16] was a French physician who resided twenty years in Martinique. During his stay he kept very careful memoranda of all diseases coming under his notice, and being an accurate and skilful observer, his conclusions are worthy of respect. I desire here to express my sense of obligation to his conscientious and exact records, to which I shall have occasion several times to refer. In speaking of elephantiasis he states that it is much more frequent in the negro than in the mulatto, in whom one sees it very frequently, but that he has never seen it in a white person. Levacher,[17] another French physician, has noted the same peculiarity.

It is, however, useless to burden our argument with the further citation of authorities. The testimony is uniform and emphatic as to the great preponderance of elephantiasis Arabum in dark-skinned races, and we are bound to accept it as a fact, explain it how we may. I have notes of five cases seen by me during the past year. Four were in colored persons and one in a white man. In one case the diagnosis was verified by a post-mortem examination.

There is much doubt as to the exact etiology of elephantiasis Arabum. Medical literature is full of articles bearing on this point. It has been described as erysipelas, as a phlebitis, as a lymphangitis, as a disease of the nervous system, and as a result of blocking of lymph-channels due to filariæ. The truth appears to be that many separate processes have been described as elephantiasis. But whatever each may assign as the particular cause, all are agreed as to the result, viz., an enormous increase in the connective tissue. The cuticle may be normal or thickened. When thickened I think the process should be ascribed to mechanical causes, as the epidermis is of epiblastic origin, while the corium is of mesoblastic origin, along with the connective tissue, and as this is purely a connective-tissue growth the epidermis should not, as a necessary consequence, be involved. In most cases the cuticle is normal. As would be expected, the corium is thickened, and contains a tolerable abundance of fine elastic filaments. The subcutaneous connective tissue is enormously developed, and is generally thicker next the derm. The hypertrophied connective tissue consists of yellow and white fibrous tissue, the former being more abundant. It may contain unstriped muscle, arranged in narrow bands, vertically as well as transversely. The sebaceous and sweat glands are generally normal. As Wilkes and Moxon[18] well point out, there is in the hypertrophied connective tissue of elephantiasis no element differing in kind from those normally found. There is, however, one constant change noted by nearly every observer. The bloodvessels are more numerous, and are enlarged, the increase being in the tunica adventitia, and consisting in proliferation of round lymphoid cells. This has been noted by Rasmussen,[19] Wilkes, and Moxon,[20] Crocker,[21] and (according to Rasmussen) by Brücke, Leydig, Robin, and His. Fenger,[22] in a recent case, notes this same peculiarity.

Strange to say, comparatively few observers note any changes in the lymphatic vessels. In view of the generally accepted pathology of elephantiasis, this omission seems strange. Even should lymphatic involvement be an essential part of this disease, it would not change its character as a mesoblastic process, as the lymphatic vessels are derived from that layer.

Summing up, elephantiasis may be defined to be a disease characterized by an enormous connective-tissue hypertrophy, accompanied by an increase in the number of bloodvessels, with thickening of their walls and proliferation of lymphoid cells in their tunicæ adventitiæ, and also, in some cases, by an alteration in the size of the lymphatics.

By every observer, in a position to judge, the tendency to keloid has been recognized as a peculiar characteristic of the dark-skinned races. To such an extent is this true that it has grown into a fixed tradition that any injury in a colored person, especially a full-blooded negro, will be followed by the development of this fibrous growth. Every American observer has noted this racial peculiarity, and the same is true of not a few foreigners whose opportunities have been good.

As to the frequency of keloid among whites, Professor James C. White[23] gives an interesting analysis of the comparative frequency of certain skin-diseases in America, as compared with Scotland, Ireland, England, and Austria (Vienna). The cases are divided into two classes, dispensary and private cases. With reference to keloid, he reports fifteen cases in 10,000 American dispensary cases; no case in 3000 similar Irish cases, and but one in 23,944 cases reported from the great Vienna clinic. The statistics from private cases are not less interesting. In 2000 American cases of this class there was but one case of keloid. No case of keloid was reported in 1000 Scotch and 10,000 English cases of this character. Of course in these statistics there is no attempt to classify as to color.

Since 1878, the American Dermatological Association has published yearly reports of the number and character of skin-diseases coming under the observation of its members. The report for 1890 brings the total number of cases observed since 1878 up to 157,067. Of this number, 179 were cases of keloid, a percentage of 0.114. While the element of color is excluded from these statistics, it is interesting to note that many more cases of keloid are reported from cities having a large population of colored people than from those less favored in this respect. Morison,[24] in a careful study of 1000 cases of diseases of the skin, 500 in white and 500 in colored persons, gives some valuable information. For the sake of greater accuracy he divides the colored into pure blacks and those of mixed blood. As to keloid, he notes no cases among the whites, none in the mulattoes, and three in the pure blacks.

Since June, 1891, I have examined 152 colored persons with reference to this growth, and I have found keloid in 9 instances. During the interval I have examined 392 whites and found no cases of keloid. Of course, had the examination been confined to skin-diseases alone the percentage would have been larger. The statistical tables of the Johns Hopkins Hospital for the year ending January 31, 1891, show 1 case of keloid among 526 whites, and 2 cases among 92 colored patients in the surgical wards. Every American author on diseases of the skin notes this proneness of the colored race to keloid. Among others, mention may be made of Duhring,[25] Hyde,[26] Atkinson,[27] and Morison.[28]

At the meeting of the American Surgical Society, in 1888, Tiffany[29] read a paper on "Surgical Diseases in the White and Colored Races," basing his conclusions on 4390 cases, 64 per cent. being white and 36 per cent. colored. Among other things, he states that keloid is very common among negroes and rare among whites. In this conclusion he was sustained by such excellent observers as Briggs, Gregory, and the late Christopher Johnston, the last-named going so far as to say that he regarded the occurrence of keloid as characteristically frequent in the negro, and, of course, in a figure greatly preponderating over that among the white race. This racial tendency has not escaped English observers. The careful report of the "Keloid Committee" of the Clinical Society[30] mentions as a well-known fact the frequency of this growth in the negro after blows and cuts.

Lastly, I desire to summon as a witness Dr. Rufz,[31] the French physician before alluded to. In an analysis of the cases of skin-disease seen by him during his twenty years' residence in Martinique, he divides them into:

1. Those never seen.
2. Those rarely seen.
3. Those most frequent.
4. Those that appear peculiar to Martinique.

In the last class is keloid, which he describes in the following language:

"Voici une affection de la peau qui me paraît particulière à la race noire. . . Au premier coup d'œil, elle peut être confondue avec l'éléphantiasis des Arabes et a peu passer pour être une de ses variétés. . . Ces saillies sont très fréquent chez les noirs, j'en ai vu quelques exemples chez les mulâtres, mais jamais je n'ai vu rien de semblable chez le blanc."

I think the evidence will warrant the conclusion that we have in keloid a disease affecting in a peculiar degree the dark-skinned races. Perchance it may seem an omission that no attempt has been made to separate the true from the so-called false keloid. Histologically there is no difference, and some good observers go so far as to deny the possibility of spontaneous keloid, claiming that in every case of this disease there must have been a preceding injury, although this may have been so slight as to have escaped notice. It is true that some pathologists claim that in spontaneous keloid the rete and papillæ are present, while in the cicatricial variety the entire structure of the skin is replaced by new connective-tissue growth. The distinction seem factitious and not to rest upon a sufficiently solid basis to warrant its acceptance.

Pathologically, keloid is a pure connective-tissue new-growth, beginning around the bloodvessels. It is intermediate in character between a cicatrix and sarcoma. In its minute anatomy it consists of parallel connective-tissue bundles, running in the corium. In the more advanced cases the connective tissue replaces the entire structure of the corium. The walls of the bloodvessels are infiltrated, and this infiltration extends for a long distance beyond the borders of the growth. This change in the adventitia is especially marked at the edges of the growth and at the parts where the arteries send branches into the papillæ.

Comparing this with the pathology of elephantiasis a great similarity may be noticed. There is in both a true connective-tissue hypertrophy, an absence of any element differing in kind from the normal structure, and a development by cell-proliferation, beginning in the walls of the smaller bloodvessels. The two are nearly alike, but in keloid the epidermis being, as a rule, destroyed, there is a tendency to growth outward, above the level of the skin, while in elephantiasis the cuticle always forms the outer layer of the thickened mass.

Coming now to the third fibroid process peculiar to the dark races, we must, for the most part, accept the testimony of American observers, for the reason that they alone have had the requisite opportunities to judge as to the relative frequency of these growths in the two races. The language of Peaslee[32] is most emphatic. After stating that the uterine fibroid is very common in the negro race, he goes on to say that "very few women die, above the age of forty, at the Home for Colored Women in this city (New York), who are free from this disease." Briggs, of Nashville, at the meeting of the American Surgical Society in 1888, referring to the diseases of the negro, noted that abdominal fibroids are very common, and that the greater number of abdominal tumors in the negro belong to the fibroid or fibro-cellular variety. Tiffany,[33] Ware,[34] William H. Flint,[35] Thomas,[36] and many others, confirm this testimony. J. B. S. Jackson,[37] speaking of the diseases of Barbadoes, remarks that there seems to be as much as most persons would desire to see in the form of polypi and fibroid tumors. In the Johns Hopkins Hospital,[38] during the year ending January 31, 1891, there were treated in the gynecologic service, 373 white, and 89 colored persons. Of the former, 11, or 29 per cent., suffered from uterine myomata, and of the latter, 8, or 9 per cent. were afflicted with these growths. My friend Dr. D. S. Lamb, of this city, has kindly allowed me access to his record of autopsies. Of these, 85 were made on females over the age of fifteen years, 20 being white and 65 colored. In the whites uterine fibroids were only once found, or in 5 per cent. of bodies examined. They were present in the colored in 10 out of 65, or 15 per cent. In the report of the Government Hospital for the Insane for the year 1892, the pathologist of the institution, Dr. I. W. Blackburn, a most competent observer, gives synopses of post-mortem examinations in 69 cases of mental disease in females, with special reference to the condition of the organs of generation. Of the 69 cases 34 were white and 35 colored. Leiomyomata of the uterus, often multiple, were found in 17 cases, 15 of which were colored.

Dr. Rufz,[39] to whose careful observations I have already expressed my indebtedness, bears testimony in this particular equally as strong as in the cases of elephantiasis and keloid. He says:

"La fréquence du polype utérin à la Martinique m'a fait penser quil y avait dans le sang du négre quelque élément propre à la production des corps fibreux, ainsi que semblerait aussi le faire croire cet autre fait de la facilité des hypertrophies fibreuses de la peau à la suite des blessures et les heurts les plus legers."

The supposition hazarded by this shrewd observer that there is something in the blood of the negro predisposing to the development of fibrous growths is entirely in the line of my own thought and argument.

Personally, I have not had sufficient experience in this class of tumors to warrant any definite statement as to their frequency. A glance at the pathology of these growths will, I believe, show a structure somewhat similar to that of the two before considered. To begin with, they are mesoblastic growths. They are strictly homologous to the uterus in structure, and consequently contain a varying amount of muscular tissue. Consisting, in the beginning, almost entirely of unstriped muscle, they rapidly undergo fibroid degeneration—so rapidly, in fact, as to lead almost irresistibly to the conclusion that the change is fibroid from the start. The tendency among pathologists, in late years, has been to consider these growths as myomata, but the period of pure myomatous structure is short, if indeed it exist at all. They soon become fibroid, and, like all fibroid structures, are prone to undergo calcareous degeneration late in their history. Again, it must be borne in mind, as Sutton pertinently remarks, that all fibrous neoplasms may not have been composed of fibrous tissue originally, but may have consisted in great part of unstriped muscle-fiber which has later degenerated into fibrous tissue. This may be the true key to the underlying changes in elephantiasis and keloid.

As keloid and elephantiasis contain the elements of the corium, so these growths contain the elements of the uterus, but the growth is none the less a connective-tissue one. The more the muscular structure predominates, the more firmly is the tumor connected with the uterine walls. These growths are encapsulated, and between the capsule and the main body of the growth is a layer of loose connective tissue, in which run many bloodvessels, often of large size.

Kleinwächter[40] describes the evolution of these tumors from certain round cells which occur alongside of slowly-obliterating capillaries. These round cells are later transformed into spindle-shaped corpuscles which arrange themselves in such a way as to form myomatous nodules. This pathology is not dissimilar to that of elephantiasis and keloid.

There is the same lack of foreign elements, and the same increase of fibrous tissue from cells deposited around the capillary bloodvessels.

Reasoning by analogy, we should expect to find fibroma less frequent in the white than in the dark-skinned races. It is doubtful, however, whether tumors of this class are sufficiently numerous to warrant a classification in this respect. If ever such a classification be made, I believe the law will be found to hold good.

It is possible that the ease with which fibrous tissue is formed in the colored race will explain, in part, the rapid healing of wounds in them. The process of healing in wounds is, in its essence, a connective-tissue process, and in accordance with the facts already laid down, it would naturally be expected that it should take place more readily in the dark-skinned races.

Sarcoma is the most frequent of the malignant neoplasms in the colored race. This is my own observation, and that of all other observers who have had much to do with these people. Tiffany,[41] Briggs, and others, make this statement. This is only what might be expected, if fibroid processes are a characteristic of the race. Sarcoma is the purest type of a connective-tissue neoplasm, containing, as it does, only the elements of the embryonic connective tissue, and it would be only natural that it should be the form of malignant neoplasm most frequent in the colored race, if our contention as to the liability of this race to fibroid processes be true.

I think that sufficient proof has been adduced to show that we have, in the frequency of these fibroid processes in dark races, a distinct racial peculiarity.

If the premises here laid down be correct, the following conclusions may legitimately be drawn:

First. The dark-skinned races differ from the white race anatomically, physiologically, and pathologically.

Second. That there are three diseases characteristically frequent in the dark-skinned races, as shown by the independent testimony of English, French, and American observers. These are elephantiasis Arabum, keloid, and the so-called uterine myomata.

Third. That these are all mesoblastic growths, and that in general terms their essential characteristic may be said to be an increased development of fibrous tissue, due to proliferation of cells around the capillaries, these being increased in number and size, and having thickened tunicæ adventitiæ. They are true inflammatory scleroses.

Fourth. That in respect to malignant growths, the same connective-tissue type predominates.

Fifth. That it may be laid down as a pathologic law, not heretofore enunciated, that there is some peculiarity in the dark-skinned races rendering them liable to growths of a fibrous nature in a degree greatly exceeding that observed in the white race.

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CONCERNING THE ETIOLOGY OF ECZEMA.[1]

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HEBRA'S comparison of eczema to the irritation of the skin produced by croton oil, with due deference to this distinguished teacher, I believe to be incorrect. Like any other irritant, croton oil produces an inflammatory condition of the skin known as dermatitis. Dermatitis must be clearly distinguished from eczema, though many forms of acute eczema are really cases of dermatitis. The point that I would emphasize is that dermatitis is not

[1] Read before the Pan-American Medical Congress, held at Washington, D. C., September, 1893.

eczema, although dermatitis may produce eczema. Both affections are based upon an inflammatory process.

Let us investigate the clinical difference between these conditions. Inflammatory processes of the skin, like those of any other organ, consist in vascular changes, hyperemia, exudation, nutritive disturbance, alteration of the peripheral sensory and motor nervous apparatus, pain, and disturbance of function. Every pathologic process showing these characteristics is without doubt inflammatory, as are also in eczema the changes in the nutrition of the tissues and the disorders of the peripheral sensory nerves, although not so intense. When we find an active hyperemia accompanied by an effusion of serum and emigration of blood-corpuscles, we do not hesitate to consider the condition an inflammatory process, as it falls under the description of Celsus: *Calor, rubor, tumor, dolor.*

It is true that Auspitz[1] proposed to call any one of the inflammations of the skin, whether superficial or deep, a dermatitis. While Hebra reserved the term dermatitis exclusively for the deeper-seated inflammations of the skin, we cannot deny that eczema is an inflammatory affection of the skin, hence a dermatitis; but everyone who has had experience with diseases of the skin, finds that it is an inflammatory process *sui generis*. We speak of eczema erythematosum, papulosum, rubrum, impetiginosum, or squamosum as simple varieties of eczema in degree, but not varieties in kind or cause.

Török describes eczema as an inflammatory alteration of the epidermis, accompanied with infiltration of serum and of small cells. Chronicity is the characteristic of eczema, and this characteristic, according to Török, finds its explanation in the continued tendency to relapse, either at the point of origin or in surrounding regions. So we conclude that there is no true acute eczema, but that the so-called acute eczema is only relative. The severity of the symptoms depends on the reaction of the skin of different individuals to irritations. For instance, the heat of the sun will in one produce a dermatitis which does not exceed the degree of an erythema, while in another it will produce vesicles and an abundant exudation, constituting what has been called acute eczema, or better, *dermatitis calorica*. But these symptoms do not constitute a true eczema, though under favorable circumstances a dermatitis may be followed by eczema. I have often seen in my clinic well-nourished children of healthy parents with eczema around the nose, the chin, and in scattered patches on the cheeks. Abundant muco-purulent discharge oozes from the nose. In these cases the eczema doubtless results from the continued contact of the purulent matter with the skin. Cases of eczema auriculæ, spreading down the maxillary and cervical region, with the formation of vesicles, pustules, covered with thick crusts, are frequently brought to my clinic. The ear is affected with otitis media purulenta, pus of offensive odor being discharged from the meatus; here too there is no doubt that the cause of the eczema is to be ascribed to the presence of the pus. I have often seen cases of eczema in the form of scattered pustules under poultices applied to suppurating surfaces, and which have remained for a long time in contact with the skin.

I would illustrate these points by the following case:

Case I.—Miss S. S., a professional nurse in a hospital, had several patients with purulent discharge from the vagina. Twice daily she used to syringe her patients, introducing the syringe with two fingers of the left hand. The purulent discharge often went between her fingers. She applied to me to be treated for eczema interdigitalis. She had plaques of eczematous eruption between the third, the fourth, and the fifth fingers of the left hand, from the second to the first phalanges, in the interdigital spaces, in the form of red inflamed plaques, consisting of small vesicles deprived of their epithelium, showing a raw, oozing surface, with an itching and burning sensation. Can we deny that the presence of the pus was the cause of this eczema?

Case II was a barber who shaved some of his customers affected with acne. He spread the soap with the dorsal surface of his right hand, and pustules appeared at this point. He called on me with eczema on the whole dorsal surface of the right hand, showing plaques of vesicles in different stages, some broken, covered with crusts, some filled with sero-purulent fluid, on an infiltrated basis, with innumerable rhagades toward the joints. The man, in perfect health, never had any other trouble with his skin, and no other cause could be found than that pus had remained on his hands, rendered already tender from the continuous use of water and soap.

These examples can be multiplied indefinitely, and I must say that from their consideration I have reached the conclusion that the presence of pus on the skin is one of the most effective causes of eczema. This conclusion receives support from the communication of H. Leloir,[1] who holds that impetigo is a contagious disease. He refers to cases of pustules and ecthyma, which were communicated from the mother to the child, and *vice versa*. He reports the case of a man affected with impetigo of the beard, who by scratching transmitted the cocci of

[1] System der Krankheiten. Wien, 1881

[1] Journal des Maladies Cutanées et Syph., 1891: "Ueber die nach Impfung mit eitererregenden Mitteln entstehenden Hautkrankheiten."

the pus to other parts of his body, showing abundant pustular eruptions in the axillæ.

In scabies the pustules, impetigo, furuncles, are nothing else but the spreading of purulent matter all over the body from scratching. Leloir comes to the conclusion that the cocci of the pus affect every layer of the skin from the epidermis to the deepest layer, causing inflammation, and that they find their way into the skin by any excoriation produced either by parasites or by any mechanical irritation. Leloir, in his cultures, found the staphylococcus pyogenes aureus in furuncles and carbuncles, and in many cases of ecthyma, and which in some cases was mixed with the staphylococcus pyogenes albus. Now, if these cocci from pus are capable of producing inflammation of every organ of the skin, why cannot they produce an inflammation of the epidermis, which we call eczema?

To substantiate this view, I found it necessary to resort to experiment, which I made with the staphylococcus pyogenes albus. I must tender my thanks to Dr. Kramer, Professor of Bacteriology in the Cincinnati College of Medicine and Surgery, who kindly supplied me with a pure culture of the staphylococcus pyogenes albus. In a rabbit the hair of the external portion of the ears was shaved off, and the ear then carefully washed, and rubbed with a pure culture of the staphylococcus. No alteration of the skin could be perceived. Another rabbit was prepared in the same way, and both ears were painted several times with croton oil. After twenty-four hours both ears were red, painful, and covered with vesicles. The left ear was inoculated with the pure culture of the staphylococcus; the other was left intact. Both ears, after four or five days, presented the symptoms of dermatitis much diminished, the redness lessened, though the epidermis remained hard, dry, and scaly. Ten days afterward, however, the left ear, which had been inoculated with the pure culture of the staphylococcus albus, began to show symptoms of eczema. Small pustules formed, covered with yellow crusts, which when removed showed the rete mucosum, oozing a serous fluid, and—a remarkable fact—the hairs were falling off, producing alopecia. The other ear (the right), which had not been inoculated, but only had been painted with croton oil, was improving, the hardened epidermis was scaling away, leaving a normal surface, the hair remaining intact, except where the ears came in contact with each other. This eczema lasted over four weeks, after which time the crusts began to fall off and the skin to return to its normal condition.

From these experiments I feel justified in assuming the staphylococcus pyogenes albus as a cause of eczema, and that its development under the epidermic cells produces this disease. The staphylococcus does not always find a fertile soil for its development, as it requires that the epidermic cells be loosened that it may penetrate beneath the surface. Inflammation of the skin, dermatitis, is therefore the most effective factor for the preparation of the soil for the penetration of this micro-organism.

My simple experiment shows that the staphylococcus does not develop in healthy epidermis. It is necessary therefore that the ground be prepared for it. This may be the explanation why eczema has been held non-contagious; but if the ground is prepared, eczema is certainly contagious. Everyone can remember cases of eczema of the scrotum in which the eczematous eruption has affected the skin of the thigh in close contact with the scrotum. Very often we see eczema of one leg affect the other, for the only reason that the affected surface is kept in contact with the other, especially while sleeping. Scratching scatters the staphylococci about the skin and prepares the epidermis for their culture. By means of the finger-nails the patient takes the crusts, the serum, the purulent matter, and brings them to other parts of the body, where, finding the epidermis scratched and its horny cells loosened, they begin their work of reproduction. It is no serious objection to my statement that the husband, when affected with eczema, does not communicate the disease to his wife, for one must consider that, first of all, skin-diseases produce a certain natural repulsiveness, and therefore lessen the frequency or closeness of contact. The same precautions are used with other members of the family. Moreover, the healthy epidermis does not permit the development of the cocci, which may only occur with solution of continuity. I can recall plaques of eczema on the breasts of mothers nursing a child affected with eczema of the face.

The contagiousness of eczema is entirely dependent upon the condition of the epidermis, which allows the development of the cocci only when not in an exactly normal condition. My experiment plainly shows this: When I rubbed the ears of the rabbit with the culture of the staphylococcus, the result was negative; but when I rubbed the culture of the staphylococcus after the epidermis had been blistered with croton oil, the skin was affected with an eczematous eruption that lasted over four weeks. In many cases of eczema we can distinctly see the precedence of the irritation and dermatitis, and from them the pus has been formed, which has produced the eczema. Take, for instance, eczema infantile which follows seborrhœa capillitii; the sebaceous masses are formed on the scalp, the glands are inflamed, and under the masses of sebum pus is formed. As soon as pus is formed eczema begins. From its origin we may call this variety eczema sebaceum, in order not to confound it with seborrhoic eczema, which I consider totally different from true eczema. As long as the sebaceous masses do not produce inflammation of the epidermis, the affection remains limited to simple cases of sebor-

rhea; but when the sebaceous masses macerate the epidermis, and produce inflammation, with the formation of pus, the eczematous condition has begun and we have present a true eczema. The child, annoyed by the itching sensation, rubs as much as possible, spreads the purulent secretion on the face and the ears, and thus the eczema extends.

In my experiments I could see that from the time of the inoculation of the staphylococci and the appearance of eczema there is a period of incubation of from one to three weeks. I believe that this period of incubation can be called upon to remove the objection that sometimes an eczema has recovered, and that a short time after it reappears. We should remember that sometimes the cocci remain between the connections of the epidermic cells, and that with the naked eye or with a common magnifying glass nothing can be perceived. This may explain why in one or two weeks eczema appears again as a "relapse." These kinds of eczema are often considered as nervous eczema on account of the tendency to relapse.

The skin differs in susceptibility to eczema, some individuals affected with scrofula being much more liable to it than others. Eczema is not transmitted by heredity, but there may be transmitted the vulnerable skin, which may predispose to the development of the disease. Nothing is transmitted in eczema; no *materia peccans* is transmitted from parent to offspring, but only a weak constitution or an easily-affected skin makes the offspring subject to eczema.

Neither do I agree with my distinguished colleague, Dr. D. L. Bulkley,[1] who attaches so much importance to the nervous system in the production of eczema. In a large number of patients suffering with this disease in every shape and form—circumscribed, universal, papulosum, rubrum, squamosum, etc.—I can say that in nearly every one I could not find any nervous trouble. The only thing which is often remarkable is sleeplessness, the result usually of the itching sensation which nearly always attends eczema.

I do not wish to dispute this point, as not more than one year ago I admitted the presence of a nervous eczema produced by reflex action of the nervous system. I do not doubt the truthfulness of the cases referred to by Meyer[2], Leloir, Tommasoli, Radaven, and many others, but what I want to ask is this: Were all these cases of true eczema? As I said, I have seen cases of acute eczema follow dietetic disorders, such as excessive smoking, but, although one year ago I was inclined to call those cases acute eczema, to-day I am willing to call them dermatitis, with a qualifying adjective such as neuritica, vesiculosa, etc.; but I am no longer willing to let them pass under the name of eczema. My rabbits, when they got eczema, had no moral shock, but on an inflamed surface of the skin they had inoculated the culture of the staphylococcus albus. In the same way, if all these cases have eczema they took it from the pus on an inflamed skin. I am fully convinced, with Bulkley, that children at the time of dentition may have a vesicular eruption of the face; I am not opposed to the belief of Scarenzio, that his patient had a vesicular eruption on account of the presence of a tapeworm in the intestines; I do not deny the presence of a vesicular eruption in women at the time of pregnancy, or of the catamenia—but are these eruptions true eczema? I answer, *no*. They are only cases of dermatitis, neuritic eruptions, herpes, entirely different from true eczema. That eczema could follow these eruptions there is no doubt, when we remember that a sero-purulent discharge was furnished by the vesicles, or by the bullæ, and the presence of the staphylococci on the skin could at this time produce eczema. By scraping with a sharp spoon upon the eczematous surface and staining the scraping with methyl-blue we obtain isolated epidermic cells that show a large quantity of staphylococci. Staphylococci in their development produce toxins, to which the tissues cannot remain entirely indifferent, and also toxalbumins. The toxalbumins, to produce their effect, need to find an excoriation or an abrasion, otherwise they remains harmless.

Bockart, in 1887, had already produced pustules by the artificial inoculation of the staphylococcus pyogenes albus, and flavus, and this furnishes another support to my theory. From Konrad and Buedinger[1] we know that as soon as the staphylococci of pus appear in a wound, the healing *per primam intentionem* is disturbed. Staphylococci applied on the skin of the arms of the authors caused follicular abscesses, with this difference, that staphylococcus albus and aureus produced mild irritation, while the staphylococcus citreus produced severe suppuration and deep furuncles. From the different cocci, different forms of eczema arise, a difference which may also depend upon the different organs of the skin affected. Although my work is not complete, it seems to me to justify the following conclusions:

1. Eczema is a local affection of the epidermis of a chronic inflammatory character, contagious under favorable circumstances.

2. It is caused by pyogenic microörganisms (staphylococcus pyogenes albus) developed upon a previous inflammation of the skin.

[1] Ueber die Beziehungen des Eczems zu Störungen des Nervensystems. 1891.

[2] De l'Influence des Émotions morales. Paris.

[1] Wiener klin. Wochenschrift, 1892.

HALLUX VALGUS.[1]

BY JOHN B. DEAVER, M.D.,
OF PHILADELPHIA;
PROFESSOR OF SURGERY IN THE PHILADELPHIA POLYCLINIC; ASSISTANT PROFESSOR OF SURGICAL ANATOMY IN THE UNIVERSITY OF PENNSYLVANIA.

IN reporting this case of double hallux valgus, in which the deformity has been corrected by subcutaneous osteotomy of the neck of the first metatarsal bones, I propose to call attention as well to the varieties of this deformity, whether existing alone or in connection with enlargement of a mucous bursa developed in the superficial fascia covering the prominent portion of the head of the metatarsal bone, the result of prolonged pressure (bunion), and to the different forms of treatment.

The varieties of hallus valgus may vary from a slight abduction or displacement outward of the great toe, to a position in which the proximal phalanx is almost at right angles to the metatarsal bone. In the latter variety of the deformity the great toe lies either underneath or on top of the adjoining toes. In the aggravated varieties of this affection the deformity is not bony alone, but there is also a swelling over the site of the metatarso-phalangeal joint due to bursal enlargement. The several conditions that may constitute factors in the production of hallux valgus are the following: That which is the most common in my experience is crowding the feet into too narrow and too short high-heeled shoes. This is unfortunately the popularly shaped shoe. Short and narrow shoes contribute to this deformity by forcing back the last phalanx when the contact with the shoe prevents elevation and consequent flexion of the joint between the proximal and the second phalanx. On account of the resistance offered by the shoe, coupled with the lateral mobility of the first metatarso-phalangeal articulation, the toe is carried outward, or abducted. When any of the remaining toes are subjected to a like pressure on account of the absence of resistance on the part of the shoe, the proximal phalanx is lifted and the first phalangeal joint is strongly flexed, giving rise to what is known as "hammer-toe."

If the foot is forced into a narrow and pointed shoe the points whereon the greatest pressure is produced are the heads of the metatarsal bones of the great and little toes, resulting in the formation of a corn over the metatarso-phalangeal joint of the little toe, while the great toe, on account of its greater lateral mobility, becomes abducted, owing to the pressure on its extremity. This displacement of the great toe forms, to a greater or less extent, an incomplete luxation of the proximal phalanx. The exposed portion of the articular surface of the head of the metatarsal bone, being now no longer in contact with the articular surface of the phalanx, is subjected to continuous pressure, and becomes enlarged from proliferation of bony tissue. If the head of the metatarsal bone is not relieved of the pressure of the boot there will be produced a bursa over the enlarged bone, which not infrequently suppurates, leading to a most painful condition. Bursal fistulæ, consequent upon ulceration of the bursa, are often seen. These, too, may involve the joint, causing inflammation and suppuration. Again, it not infrequently happens that the synovial lining of the entire joint and also the articular cartilages, undergo change, resulting in an arthritis of a mild or severe degree.

Contraction of the muscles of the great toe, the result of infiltration dependent upon a rheumatic inflammation or of inflammation of the nerves supplying the muscles, may be enumerated as one of the causes of this deformity, yet it must be a very remote one. Another cause may be chronic inflammation of the joint, of the metatarsal bone, or of its periosteal covering, due to traumatism. I believe, however, as I have previously stated, that pressure, either alone or combined with other causative factors, is the chief element in the production of the deformity.

The treatment of hallux valgus will depend entirely upon the degree of the deformity, the amount of discomfort, etc. If seen very early, and the deformity be but slight, it may suffice simply to have the patient wear a properly fitting shoe, by which I mean one with comparatively wide toe and a very low heel, thus avoiding crowding of the toes. A properly fitting shoe should not in any way tend to diminish the transverse diameter of the foot between the heads of the first and fifth metatarsal bones. The use of plasters for protection applied over the projecting head of the metatarsal bone of the great toe, or over an enlarged bursa, is, I believe, capable of doing more harm than good, and in time, with this treatment, the deformity must surely increase, especially if the shoe worn is not very roomy at the toe. The use of appliances, such as devised by Biggs, I believe is equally ineffective. When the deformity is great enough to indicate the adjustment of an appliance I always feel that operation is more strongly indicated.

The operative treatment should consist either of osteotomy of the neck of the metatarsal bone, or excision of the joint. In my experience osteotomy fulfils the indication best in the great majority of cases. When a large bursa is present I dissect it out before dividing the bone. The degree of deformity, so long as there is no great disorganization of the joint-surface, should not influence the

[1] Read before the Section on Orthopedic Surgery of the College of Physicians of Philadelphia.

operator against osteotomy, as the deformity can be wholly corrected by this procedure.

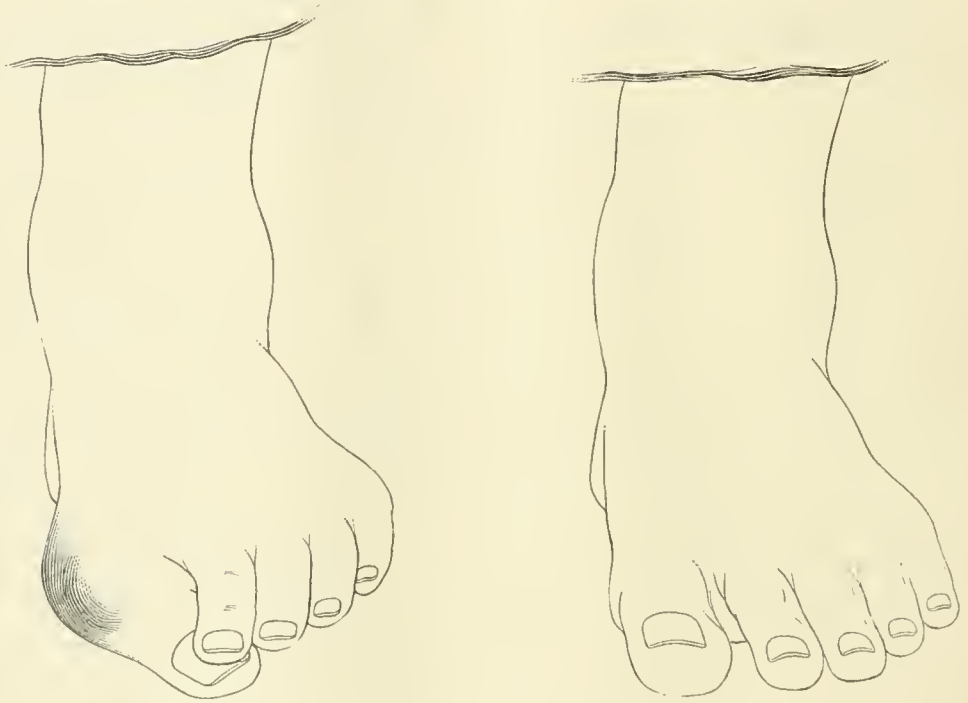
In the class of cases in which the proximal phalanx is displaced outward to the extent of making a right angle with the metatarsal bone, the thickest osteotome should be used, so as to have the incision as nearly V-shaped as possible, thus allowing the toe to be brought in a position of strong adduction.

In performing osteotomy the foot is rendered bloodless by the application of an Esmarch bandage and tube. The incision through the soft parts, including all of the tissues down to the bone, is carried over the neck of the bone along the inner side of the foot. The foot, as in osteotomy of other bones, is made to rest on a small bag of sand.

The bone having been divided, the wound is closed with catgut sutures and dressed with the ordinary antiseptic dressing. The great toe, being strongly adducted, is held in this position by a straight splint with a hole at the base to fit the internal malleolus and applied along the inner side of the foot. At the end of a week or ten days the splint is removed and the foot dressed with plaster. This dressing is allowed to remain in place for six weeks, when it is removed and the patient allowed to use the foot as before.

Excision of the metatarso-phalangeal joint of the affected toe I perform only in that class of cases in which the joint is positively disorganized, as demonstrated by the presence of physical signs of advanced arthritis. In the milder cases of arthritis arising in connection with hallux valgus recovery will surely follow correction of the deformity by oeteotomy. Crepitation, present so frequently in chronic articular disturbances, does not by any means imply a stiff joint when repair shall have become complete.

The more conservative operations that have been advised, such as subcutaneous section of the external lateral ligament of the affected joint, or of the tendons of the adductor or flexor brevis pollicis muscles, I believe, are capable of accomplishing but little in the way of correcting the deformity; I therefore neither practise nor advise them.



The appearance of the foot before and after operation.

Amputation can but seldom be required, as excision in the class of cases in which amputation might seem indicated will, in the majority of instances, be the better operation. The same conditions, however, such as advanced age, the presence of a constitutional diathesis, etc., that, under other circumstances, make amputation preferable to excision, must be carefully considered.

HISTORY OF A CASE OF HALLUX VALGUS.

E. McC., twenty-two years of age, was admitted to the German Hospital with the following history: He had had both toes frostbitten last January, and stated that this accident was the cause of two "bunions" that appeared shortly afterward over the metatarso-phalangeal articulation of either great toe. The man consulted a surgeon, who lanced both "bunions." Since that time the patient has had much

trouble in wearing shoes and great pain in walking. He was admitted to the hospital during the latter part of September, with marked hallux valgus of both feet. A subcutaneous osteotomy was performed upon the metatarsal bone of either great toe, the toe straightened, and a straight splint adjusted to the inner side of either foot. The bandages and splint were removed for the first time four weeks after the operation, when perfect union was found to have taken place. A silicate dressing was then applied and the patient discharged five weeks after the operation. He was readmitted four weeks later with a slight bursitis of the left foot, which yielded rapidly to applications of lead water and laudanum.

ORIGINAL ADDRESS.

THE PHYSICIAN IN LITERATURE.[1]

BY ARTHUR W. HURD, A.M., M.D.,
OF BUFFALO;
LECTURER ON INSANITY.

THIS evening marks the beginning of a new college year, the first complete college year in this, our new building, and I appreciate the honor conferred upon me in being selected to deliver the first opening address.

We should congratulate ourselves in possessing so complete and beautiful an edifice in which to do our work, and we should testify our appreciation of the zeal, the energy, and the self-sacrifice that made this building a reality—that out of a realm of misty possibility brought it into being. For many years it was a wish, a necessity, ardently desired by friends of the college. I think I do no injustice to all those who labored so earnestly for it to say that perhaps our first thanks are due to the energy, the loyalty, and the labor of Dr. Charles Cary.

This building, however, is only a tool, an instrument for a certain purpose; it is a means, not an end; and, as the finer the tool the better the work, so we shall expect students and faculty to accomplish greater results than ever before. I assume that every student enters upon the study of any profession with a certain purpose, and only after a certain deliberation and thought. I believe he should enter upon it only with the highest motives and ideals. If *anyone* should enter a profession with a high standard before him and a pure ideal, it should be he who, in the capacity of the trusted physician, aims to make himself fit to enter all walks of life.

The man who enters any profession without love for it, and simply to make a living, without respect for its honor and high standing, will do his share toward lowering it in public respect, even though he do not intend this. Of him it may be said, as De Tocqueville said of American Democracy: "The man who seeks freedom for anything but freedom's self is made to be a slave." The one who enters upon a course of study for a degree, planning how little he can do in three or four years, rather than how much, is doing himself and the profession an injury.

[1] Address delivered at the opening of the Medical Department of the University of Buffalo, September 25, 1893.

But it is not my intention to moralize, only, if possible, to indictate certain directions, not strictly medical, whereby the members and intending members may discharge a duty to themselves and to the high standing and honor of this profession, which it should be their ambition to sustain.

That every student should make the most of himself, should broaden his culture to the extent of his ability, is an axiom that no one will dispute, and yet, trite as it is, I fear it is not always heeded by the student of medicine. It is my desire to impress the fact that while to know one's business may be the whole duty of the *medical* man, it is *not* the whole duty of the cultivated physician; not the whole duty to himself, or to the standing of his profession before the public.

The very term, *medical man*, in itself illustrates the comparatively low standing of the profession in that mother country of ours, where it is the common term. For our own welfare it behooves us, as students, to prevent any possibility of our descent to the level of a trade, which that term implies.

However, it has not always been so even in England. In the seventeenth century, not only did the classic side of the physician outweigh his scientific attainments, but it secured for him the respect and the high standing so often referred to in the literature of Shakespeare's time. "The wealth and social position of the olden physician," says Dr. Bucknill, "is apparent even from many satirical attacks of the time. Thus, it is shown that they habitually rode in coaches when to do so was the luxury of the rich and great; they clothed in velvet and wore velvet caps of a conceited cut, but above all they aimed at maintaining themselves at the highest level of intellectual aristocracy in their knowledge of the learned and modern languages and other attainments in the general science and literature of their age." Of Dr. Linacre, the founder of the Royal College, it is said that "Returning to England, he brought languages with him, and was the first restorer of learning in our nation." Medicine was of such standing that the greatest dramatist of all literature referred to it constantly in his plays. In fact, Shakespeare undoubtedly derived much of his evident medical knowledge from his son-in-law, a noted physician, Dr. John Hull, who married Susanna Shakespeare.

In the present century this classic learning has given place to a more material scientific standard, absolutely essential in itself, but nevertheless detracting from that broader position. Thanks, however, to the efforts for a higher preliminary and medical education, the pendulum has begun its return-swing again. To assist this movement is the aim of this college; to assist it is in the power of its every student and alumnus; and that it is for our pleasure and our advancement to assist it, it is my desire to show.

But let not the thought be lost sight of that the duty of the student is, first and foremost, to perfect himself in his knowledge of medicine. No success, no distinction, no fame in arts or letters, or in other fields, can atone for neglect of this. This is the foundation on which his other attainments may be added, but may not supplant.

The cultivation of letters, the pursuit of literature, achievements in the sciences allied to medicine—these

not only add directly to the reputation and the influence of the physician who broadens thus his scope, but they add directly to the sum-total of the knowledge of the world. And further still, they stimulate the mental vigor of the intellectual world, and in the gain the physician's own profession reaps its share of benefits as well.

That epochs in medicine have followed revivals of intellectual life has been most aptly shown by one of our own profession who so well illustrates in his own life the high ideal and the broad scope of culture that I have sought to impress—Oliver Wendell Holmes:

"It was in the age of Pericles, of Socrates, of Plato, of Phidias, that Hippocrates gave to medicine the form which it retained for twenty centuries. With the world-conquering Alexander, the world-embracing Aristotle, appropriating anatomy and physiology among his manifold spoils of study, marched abreast of his royal pupil to wider conquests. Under the same Ptolemies who founded the Alexandrian Library and Museum, the infallible Herophilus made those six hundred dissections of which Tertullian accused him. It is significant that the large-minded Galen should have been the physician and friend of that emperor-philosopher, Marcus Aurelius.

"Look at Vesalius, the contemporary of Luther; who can fail to see one common spirit in the radical ecclesiastic and the reforming court-physician, both breaking through old traditions in the search of truth; one, knife in hand, at the risk of life and reputation; the other at the risk of fire and fagot, with that mightier weapon which all the devils could not silence, though they had been thicker than the tiles upon the house-tops.

"Harvey himself was but the posthumous child of the Elizabethan period. Bacon was at once his teacher and his patient. The founder of the new inductive philosophy had only been dead two years when the treatise on the Circulation—the first fruit of the restoration of science—was given to the world. And is it to be looked at as a mere accidental coincidence that while Napoleon was modernizing the political world, Bichat was revolutionizing the science of life; that while the young general was scaling the Alps, the young surgeon was climbing the steeper summits of unexplored Nature; that in the same year one read those admirable *Researches on Life and Death* and the bulletins of the battle of Marengo? If we come to our own country, who can fail to recognize that Benjamin Rush, the most conspicuous of American physicians, was the intellectual offspring of the movement that produced the Revolution?"

And coming down, I may add, to a later time, we may recognize the same truth exemplified in the progress in medicine and surgery from the tremendous stimulus to mental work and achievement incident to our own Civil War. Material things—commerce, manufactures, productions generally—took on prodigious life and energy. Mental action was also intensely quickened. Men then, by the mighty logic of events, were forced to think and to act, and behold our progress! What was surgery, as we now know the word, before the war; and what has it become, from that very intellectual quickening! The same experience has been had with bacteriology, and every branch of the science.

Progress in medicine, as in every other department of intellectual life, thrills with the enthusiasm of a quickened national mental vigor, or droops with its decline, and he swells his own intellectual wealth who adds to the mental capital of his country and of his time. As true also is it that he who countenances false beliefs, who leads the world into error, medical or other, issues a counterfeit coin, difficult to recall and morally debasing.

It is not all of life to live, nor is it all of a physician to know the art of healing. The responsibilities he has to bear, the counsel he is to give, the confidence he should deserve—all call for the broadest culture and the deepest humanity of which he is capable.

Let the student therefore cultivate some other field—the study of ornithology, if he will—and become an Elliot F. Coues or a Shufeldt, and bring honor to himself, his profession, and his country. Or let him cultivate the science of vital statistics and medical and surgical history, and become a Billings, to place his country and his profession in the front rank in this department of all the countries in the world. Or let him cultivate the science of government and political economy, and, while not detracting from his medical powers, emulate a Virchow, whose name and fame, and whose profession are, because of him, honored in the medical and political life, not of Germany only, but of the world. Or, like a certain distinguished student of anatomy, he may turn his attention to the natural sciences and win fame for self, and make the world his everlasting debtor—an Alexander von Humboldt. Or he may turn from scenes of sickness and suffering and depict the scenes of Nature in her happier moods, and with the etcher's tool work out for himself rest, recreation, and fame, and for the world, ennobling pleasure, and still be the surgeon and artist—a Seymour Hayden.

Should any urge that medicine is too broad a science to allow time for other pursuits, too jealous a mistress to permit attention to her rivals; that her study unfits one for the pursuit of other branches, I might reply that work and mental discipline increase the power for work; that he has time for work who has no time, and that he who has abundance of leisure is the man who has no time to produce anything of value. I might reply with the words of that artist-philosopher, Philip Gilbert Hamerton, who says:

"The profession is, of all fairly lucrative professions, the one best suited to the development of the intellectual life. Having to deal continually with science, being constantly engaged in following and observing the operation of natural laws, it produces a sense of the working of those laws which prepares the mind for bold and original speculation, and a reliance upon their unfailing regularity, which gives it great firmness and assurance. A medical education is the best possible preparation for philosophical pursuits, because it gives them a solid basis in the ascertainable. The estimation in which these studies are held is an accurate meter of the intellectual advancement of a community. Where the priest is reverenced as being above ordinary humanity, and the physician slightly esteemed, the condition of society is sure to be that of comparative ignorance and barbarism; and it is one of several signs which indicate barbarian feeling in our own aristocracy that it has a contempt for the study of medicine. The progress of society toward enlightenment is marked by the steady social rise of the surgeon and the physician, a rise that still continues in Western Europe. It is probable that before very long the medical profession will exercise a

powerful influence upon general education and take an active share in it. There are strong reasons for the opinion that school-masters educated in medicine would be particularly well qualified to train both body and mind for a vigorous and active manhood. An immense advantage, even from the intellectual point of view, in the pursuit of medicine and surgery is that they supply a discipline in mental heroism. Other professions do this also, but not to the same degree. The combination of a training in positive science with the habitual contempt of danger and contemplation of suffering and death, is the finest possible preparation for noble studies and arduous discoveries."

As we read these words of an unprejudiced observer, do they not call up before us those intellectual heroes in medicine, heroes because it took courage and broad-mindedness and culture to face an almost universal opposition! Does it not call up Vesalius, and Harvey, and Hunter, and Paré, and scores of others whose culture and whose courage have made the world progress, in spite not only of scorn and contempt, but even of disgrace and death!

And there remains yet another field, which in the cultivation yields stores of pleasure and of fame. It is the field of Shakespeare, of Milton, and of Dante. It is the field that never fails its bounteous return, no matter how often gleaned, a help to the weak, a delight to the strong, and a solace to the weary.

In this pursuit of literature may we perhaps find that breadth of culture and that loftiness of ideal which should be the physician's aim. What medical men have done in literature, what pleasure, and what profit, too, they have given to the world, would require a volume to recount; and who can measure to what extent their own labors have been thereby lightened and their profession honored.

To recall a few of the physicians who live in English literature may emphasize to us their work and the impress they have left upon the literary world and their profession. We may remember Arbuthnot, the witty, wise, and good physician to queen and prince, of whom Swift says: "He has more wit than we all have, and more humanity than wit," whose writings, ranging from philosophy to satire, remain his monument.

There should not be forgot the gentle author of *Pleasures of the Imagination*, that high-minded Mark Akenside, who never forgot the duties of his profession, while he won immortality in the pleasures of his pen. Mark Akenside, the man, was but foreshadowed in his youth when he could write his "Hymn to Science" and exclaim:

> "Raise me above the vulgars' breath,
> Pursuit of fortune, fear of death,
> And all in life that's mean;
> Still true to reason be my plan,
> Still let my actions speak the man
> Through every various scene."

And then we remember the author of the *Vicar of Wakefield*, and of *The Deserted Village*, the shiftless, the careless, and the lovable Oliver Goldsmith, a literary and medical tramp, who enriched the intellectual world and rendered English literature his debtor forever—and everybody else his creditor. Indeed, his necessities were at one time so great that he was forced to borrow a new suit of clothes in order to make himself sufficiently presentable before the examining board, at whose hands he sought a governmental medical position. The agreement was that, if successful in the examination, he should thereafter pay for the suit of clothes in instalments as he drew his salary, and in the event of failure he was to return the clothing immediately. He failed both in his examination and in his promise to return the suit, which he disposed of in a pawn-shop. For a time thereafter his life was clouded by visions of a pursuing sheriff. And yet it is with honor only that we remember this unhappy physician, who could write:

> "In every government, though terror reign,
> Though tyrant kings or tyrant laws restrain,
> How small of all that human hearts endure
> That part which laws or kings can cause or cure."

Nor must we forget Erasmus Darwin, who found that his life and standing as an honored and successful physician was in no wise narrowed, but rather broadened, by his love for Nature and her flowers, of which he wrote so well. So, too, of Dr. John Moore, the traveller, the historian, and the novelist, who instructed and pleased his world, who elevated his profession, and who, to alter Shakespeare's words, "Could write and write, and be a doctor still."

Nor could we with justice omit that gentle physician and man of letters who has left much, but nothing so enduring to his fame as *Rab and his Friends*. To him also could I appeal, for did he not urge the broader culture fourscore years ago, when he said: "To give my vote for going back to the old manly, intellectual, and literary culture of the days of Sydenham, Arbuthnot, and Gregory, when a physician fed, enlarged, and quickened his entire nature; when he lived in the world of letters as a freeholder and reverenced the ancients, while at the same time he pushed on among his fellows and lived in the present, believing that his profession and his patients need not suffer, though his leisure hours were devoted occasionally to miscellaneous thinking and reading and to a course of what is elsewhere called 'fine confused feeling,' or though, as his Gaelic historian says of Rob Roy at his bye hours, he be 'a man of incoherent transactions.'

"As I have said, system is not always method, much less progress."

And then there shines as a brilliant example of the broadly-developed man, as the example of most that is best for a man and his profession in true culture, Thomas Huxley. He could be the assistant-surgeon on board her Majesty's ship *Rattlesnake*, and yet be the student of natural sciences who brought home enough material from the South Pacific to build the foundations of a world-wide fame. So, too, we have a John W. Draper, who could be a physician and yet write *The Intellectual Development of Europe*; who could be a teacher of chemistry and write his *History of the Conflict between Religion and Science*, reaching a far wider world and building up a vastly more extended field of reputation and usefulness than would have been embraced by his profession only.

The author of *Peregrine Pickle*, Tobias George Smollett, was a physician as well as novelist, and one of the most indefatigable workers in the field of English literature, which he left enriched. So, too, we might

recall John Armstrong, one of the most happy examples of the literary physician presented to us in the gallery of the eighteenth century, a successful physician and a distinguished poet, and whose profession was the more honored that he had lived.

And then we must not forget the meteoric Keats—the student of medicine and the poet whose brief twenty-five years, cut short by pulmonary tuberculosis, was sufficient for him to win an immortality of fame denied in the proverbial threescore and ten.

Of Crabbe, and Currie, and Charleton, and John Locke, bright examples of a faded generation, we have but time to call their names.

And of those whose fame is peculiarly of our own America must come that honored signer of the Declaration of Independence, who was great enough to be statesman, author, physician, all in one—Benjamin Rush. And still within the Quaker City we find in our own time his fitting successors, distinguished both in medicine and in literature, S. Weir Mitchell, and others.

We come, finally, to the most distinguished living example of the physician and man of letters, the genial Autocrat of the Breakfast Table, who so fitly illustrates that broadness of culture and depth of professional learning are by no means incompatible, and that he honors most his profession who honors all the gifts kind Nature has bestowed. In him are found the subltest wit and highest sentiment. The author of the *Chambered Nautilus* could also write the *One-Hoss Shay*.

With that high ideal of what our art should be, with that conception of what we, its devotees, owe it and owe ourselves, he wrote :

> "Life is but a song, Art is wondrous long,
> Yet to the wise her paths are ever fair,
> And Patience smiles, though Genius may despair;
> Give us but Knowledge, this by slow degrees,
> And blend our toil with moments bright as these;
> Let Friendship's accents cheer our doubtful way
> And Love's pure planet lend its guiding ray,
> Our tardy art shall wear an angel's wings
> And life shall lengthen with the joys it brings."

And so, among his books, and within the circle of that mellowed light, whence dimly peer the spirits of Shakespeare and of Milton, approving both his honor and his usefulness, we may leave the man of culture who has almost solved the secret of a happy life.

ORIGINAL LECTURE.

PISTOL-SHOT WOUND OF THE NECK—GANGRENE OF THE FOOT—VESICAL CALCULUS IN THE FEMALE—TREPHINING FOR EXTRA-DURAL HEMORRHAGE.

A Clinical Lecture, delivered at the Pennsylvania Hospital, October 4, 1893.

By JOHN H. PACKARD, M.D.,
SURGEON TO THE HOSPITAL.

Case I. *Pistol-shot wound of the neck.*—This man, an Italian, of robust frame, thirty-two years of age, was admitted to the hospital late in the evening of September 23d, having been shot in a quarrel. Nothing could be learned as to the size of the weapon or the distance at which it had been fired.

The wound, a very small one, was at the root of the neck, on the left side; it was about an inch and a half from the median line, and about an inch above the clavicle.

Now, in all cases of shot-wound, the first question is: What harm has the bullet done? and the second: What harm is it likely to do?

In this instance the ball entered a region which, as you know, contains large and very important blood-vessels and nerves. Yet on admission the man showed very slight symptoms of shock, his temperature being 98.2°; the wound was not bleeding much, nor was there any evidence that there had been loss of blood to any extent. The pulse was 110, and the respirations 40 in the minute. But with each act of expiration there was a hissing sound of air passing out through the wound, the skin about which was slightly swollen, and crackled when pressed upon with the finger; and there was frequent spitting-up of frothy blood. It was therefore evident that while the great vessels and nerves had escaped injury, an opening had been made in the trachea, permitting the escape of air into the tissues.

At my visit next morning I found the man in fairly good condition, with some considerable extension of the emphysema, but no marked embarrassment in breathing. Under ether, I enlarged the wound somewhat by an incision parallel with the clavicle, and exposed the trachea, at the left side of which there was a small opening cut by the ball as it passed backward and very slightly inward. With a blunt probe I gently followed the course of the bullet for about two inches further, but could feel no foreign body.

Now, as to the second question: What harm was this ball likely to do? It had probably lodged among the mass of muscles at the back of the neck, and the chance was that it would become encysted and lie quiet. I need hardly point out how great an error it would have been either to follow it up by a deep and dangerous dissection from the front, or to make a hap-hazard cut at the nape, in the hope of finding so small a body, which, if let alone, might give no further trouble.

The sinus made by the bullet was sterilized, a strip of iodoform-gauze was loosely placed in it, and an antiseptic dressing applied. Gradually the emphysema subsided as the opening in the trachea closed. The rest of the wound healed quickly from the bottom, until, as you now see, the appearance of the neck is quite normal, but for the scar of my incision and a little button of granulation marking the point of entrance of the bullet.

Case II. *Gangrene of the foot.*—This man, fifty-five years of age, has been sent down to us from the coal regions on account of mortification of his left foot. Until four years ago he was intemperate; he has never, so far as can be ascertained, had syphilis. His present trouble came on without apparent cause about eighteen months ago; it began with sharp, burning pain in the toes. This gradually subsided, and the sensation of the part became lost. About two months afterward the tissues began to dry up and change color. Pain continued to be felt in the body of the foot up to the ankle.

On admission the foot and toes were of a brownish-purple color, hard and dry; on the outer side of the foot, just below the malleolus, there was a large sloughing ulcer. Wherever the pulse could be felt the arteries

were found to be stiffened and resilient from atheroma. Otherwise the man's health was fairly good; there was no evidence of heart-disease. This condition of the vessels, however, always signifies a deterioration of the system. It is one of the features of old age, and is therefore termed a senile change; although, as in this instance, it may occur prematurely. The urine, normal in quantity, was examined and found to be clear, somewhat darker in color than normal, with a specific gravity of 1020; it contained neither albumin nor sugar. Special attention was, of course, given to this inquiry, as gangrene is known to occur as a result of diabetes, and this condition is one unfavorably affecting the prognosis of operations. Albuminuria is generally indicative of chronic inflammatory disorder of the kidneys, and of impaired function of these organs; it is not a bar to operation, but lessens the powers of resistance to shock, and should make one cautious in giving ether.

This dead foot must be removed, as a source not of annoyance merely, but of danger from the absorption of septic material from it into the circulation. And the amputation must be done high up, through healthy tissue, as experience teaches that by so doing we are more nearly sure of avoiding the occurrence of gangrene in the stump. I shall therefore take the limb off just above the knee.

A tourniquet is put on so as to control the circulation through the limb, and now with a large scalpel I mark out a long anterior flap, cutting right down to the bone; this flap, composed of all the soft parts, is turned back, and I pass a long knife behind the bone, and cutting downward and backward make the posterior flap. Running the edge of the scalpel around the bone I divide the periosteum, and turn it back like a cuff for about an inch. This and all the other soft parts are now held back out of the way with a retractor, while the bone is sawn through; the flap of periosteum, as you see, falls down over the sawn end. All the vessels are now tied; the tourniquet being loosened, a few small ones, mainly muscular, are secured. The wound-surfaces are now douched, and the stump is closed by suturing the muscular layers first, and then the skin, with catgut. We try to get exact apposition, leaving no dead spaces or cavities in which wound-secretions might lodge; and as an additional precaution against such retention a piece of rubber drainage-tube is inserted at each angle of the wound. Aristol is dusted all along the line of junction of the flaps, and an antiseptic dressing of sublimated gauze and cotton is applied, with a firm bandage over all. The patient is put in bed, with bottles of hot water around him to promote reaction.

(A few hours after the operation secondary hemorrhage occurred; the stump was opened up, and a vessel or two secured, but there were several renewals of bleeding within the next twenty-four hours. The man began to lose ground; he became delirious, with a high temperature and rapid pulse, and died on the sixth day).

CASE III. *Vesical calculus in the female.*—The next patient is a woman, forty-three years old, also from the coal regions. She was in good health until about five months ago, when she says she caught cold, and had an inflammation of the bladder. Ever since then she has had great pain, shooting from the navel to the pubes; her urine has been scalding, and contained mucus and pus. About a month ago she began to pass blood, and occasionally masses of gravel. For a good while she had frequent calls to urinate, but these have given way to incontinence, her urine flowing away from her continually. Her bowels are much constipated.

Her urine is found to be alkaline, and to contain mucus, with a little blood.

She has been kept at rest since her admission, with a nutritious but non-irritating diet, and a mixture containing benzoic acid, sodium bicarbonate, and a little chloroform. She has been allowed to drink nothing but Buffalo lithia water.

A sound introduced into the bladder comes in contact with a gritty substance, which, if not the whole cause of the irritation, aggravates it, and must be removed.

For this purpose I dilate the urethra by passing into it this pair of dressing-forceps, closed, and then separating the blades. My little finger now goes in readily, and now my forefinger—and a mass of calculous material and thick mucus is at once felt. It is grasped with a pair of stone-forceps and withdrawn. The bladder is now syringed out with hot boric-acid solution, and a suppository of one grain of extract of opium is introduced into the rectum.

In addition to the former treatment, this patient will now take thrice daily a capsule containing ten minims of balsam of copaiba as a sedative to the urinary organs. For some time there will be a loss of control of the bladder, but usually this power is fully regained.

(Immediate and complete relief followed this procedure, and the patient did well; but she left the hospital before the neck of the bladder had recovered its tone.)

CASE IV. *Trephining for extra-dural hemorrhage.*—This man, who is twenty seven years old, was admitted eight days ago, having been thrown from his wagon, and alighting upon his head. He made little or no complaint, but seemed dull and stupid. On shaving the scalp (and this should always be done for the purpose of examination when there is any reason to suspect fracture of the skull) it was found that he had over the right parietal bone, about an inch from the median line, an area of red points of extravasated blood; and here there was a slight bogginess of the skin, with some tenderness on pressure. Believing that the bone had suffered I thought it right to perform an exploratory operation, accordingly I had him etherized, and turned up a flap of the scalp, exposing a fissured fracture of an irregular T-shape. Applying the crown of a trephine, and taking away a button of bone, I came upon a mass of blood-clot lying upon the dura. The opening being freely enlarged by means of Hopkins' rongeur forceps, a large quantity of clot, certainly more than an ounce, was scooped out; there was still some oozing, in spite of the application of hot water. As the coagulated blood was taken away, the brain, covered by the dura, was relieved of pressure and swelled up into its place, pulsating normally. A tampon of iodoform-gauze was laid in the wound, which was brought together somewhat loosely by two or three sutures, and an antiseptic dressing applied. If the wound had been very tightly stitched up, and the oozing had continued, another mass of blood-clot would have formed, and would perhaps have given trouble; but a free exit was provided for the small amount which actually did come away. There were no subsequent symptoms to note.

You see to-day that the wound has entirely healed, and the man is practically well. Had I waited for the signs of compression of the brain to manifest themselves, as they most surely would have done, my interference would have come too late.

CLINICAL MEMORANDA.

TWO CASES OF TRAUMATIC INTESTINAL PERFORATION, WITH RECOVERY.

By H. M. KELLER, M.D.
SUPERINTENDENT AND SURGEON OF THE STATE HOSPITAL FOR INJURED PERSONS OF THE MIDDLE COAL FIELD OF PENNSYLVANIA, HAZLETON, PA.

Case I.—Mary B., twelve years of age, was admitted to the Hospital, October 21, 1893, at 9 P.M. Four hours before admission, while standing by the side of a butcher's wagon, she was shot in the abdomen by the accidental discharge of a 38-caliber revolver in the pocket of the butcher. On admission, an examination showed the bullet to have entered the abdomen about four inches to the left of the median line in the lower umbilical region, its course being downward and outward. The abdomen was considerably distended, the temperature 98.2°, the pulse 132 and weak, the respiration 36. Preparations were immediately made for operation, and the patient was placed under ether. An incision eight inches in length was made in the median line and the intestines were exposed; the cavity was filled with blood. Seven distinct perforations were discovered: five in the small, and two in the large intestine at the sigmoid flexure. These were all closed with fine silk, the Lembert suture being used. The bullet had imbedded itself in the muscles of the pelvis; it was not discovered by probing and was allowed to remain. There was considerable bleeding at the point where the bullet had penetrated the muscles, which was checked by suturing.

An interesting feature in connection with the perforations found in the small intestine was the presence of an intestinal worm, a lumbricus, eight inches long, which had been cut in two by the bullet.

The abdominal cavity was thoroughly cleansed, a glass tube was inserted for drainage, and the wound closed. The girl reacted quickly from the operation, and the following temperature-range was between 98.2° and 100°. On the second and third days the patient vomited dark-green material. The tube was removed at the end of forty-eight hours. On the fourth day there was a large, well-formed bowel-movement. The treatment was very simple; with the exception of small doses of morphin administered hypodermatically the first three days for restlessness, no drugs were given. Silkworm-gut was used in suturing the abdominal incision and the stitches were removed on the ninth day. This case resembles the celebrated one of Dr. Bull, of New York, who, as mentioned by Greig Smith, in 1885 operated on a patient with seven perforations, with recovery.

Case II.—Anthony S., twenty-two years of age, was admitted November 25, 1893, suffering with a punctured wound of the abdomen. Two hours before admission, while working in the mines, he slipped and fell on his miner's needle, the needle penetrating the abdominal cavity to a depth of six or eight inches. This needle used by the miners in preparing blasts is a sharply-pointed rod of copper or steel about three feet long. The needle was withdrawn by his companions, and he was immediately conveyed to the hospital. While on the way he vomited several times and complained of intense pain in the abdomen. On admission he was found to be suffering acutely, with the belly somewhat distended, and the pulse rapid. Only a very small wound was discovered, about three inches to the right of the umbilicus. Under ether an attempt was made to probe the wound, but the probe could only be inserted a depth of one inch, owing to a laceration of the abdominal muscle made by the needle. An incision was then made in the median line and the tract of the needle exposed; from this point the probe readily entered the abdominal cavity. The cavity was opened by a seven-inch incision and found filled with blood. Three perforations were discovered: two in the mesentery, which had caused very free hemorrhage, and one in the small intestine; these were closed with fine silk. The needle in entering had bruised the omentum, leaving a dirty tract on its surface. The cavity was thoroughly cleansed, and owing to some slight hemorrhage that still existed a glass tube was inserted for drainage. The abdominal incision was closed with silkworm-gut.

Recovery was uninterrupted, the temperature never going above 101°. The tube was removed at the end of forty-eight hours. The bowels opened on the fourth day without the use of salines. The stitches were removed on the ninth day.

THE TREATMENT OF PTOMAIN-POISONING BY MEANS OF SUBCUTANEOUS INJECTIONS OF BLOOD-SERUM.

By C. F. DARNALL, M.D.,
OF LLANO, TEXAS.

On October 19th I was called to see a pair of twin babes, females, ten weeks old, who were being artificially fed, and who had been seized the day before with vomiting and diarrhea. Upon inquiry it was found that these symptoms had set in after partaking of a newly-opened can of condensed milk. The children presented the symptoms of ptomaïn-poisoning, and in the course of four days the weaker one died. With the able assistance of Dr. H. W. Moore, of Llano, I injected subcutaneously four ounces of a normal saline solution into the surviving twin, but without beneficial result. Four ounces of blood were on the fourth day taken from the arm of the father, a stout, healthy young man, quickly defibrinated, and two ounces of the serum were injected beneath the skin over the abdomen of the surviving infant. The child was carefully watched, and reaction occurred in about six hours. Improvement gradually took place, and in six days, upon a diet of thin corn-meal gruel at first, later replaced by fresh milk properly prepared, the child was well. It was placed at the mother's breast at regular intervals, and at the time of this writing, nearly nine weeks after the onset of the illness in the children, the lacteal secretion is fully established.

The operation was merely experimental, as the babe was apparently moribund, but it demonstrated what an artificial appropriation of blood will sometimes accomplish. We used a hypodermatic aspirator with a two-

way stop-cock and needle, a clean soft-rubber catheter for the supply-pipe, and clean bowls, teacups, and broom-straw. Everything was rendered aseptic with boiling water. Three needle-punctures were made; the serum went into the babe's circulation at once, and no inflammation of the cellular tissue, or skin, or any other untoward symptom appeared.

The query arises: Was the risk increased by using blood from one so many years older? No time was at hand to select a more suitable donor; he was the child's father, anxious for the operation, and the merits were not discussed.

Many a case comes to every practitioner suitable for subcutaneous injections of blood-serum—inanition and anemia, shock, hemorrhages, and collapse in fevers. The operation is simplicity itself, and with very little risk, as compared with intra-venous injections and direct transfusions, so that everyone should be prepared to do it at once when indicated.

A FATAL CASE OF HYPEREMESIS GRAVIDARUM.

BY BOARDMAN REED, M.D.,
OF ATLANTIC CITY, N. J.

DR. CLARA T. DERCUM'S case, so well reported in THE MEDICAL NEWS of December 9th, reminds me of an experience of my own occurring four years ago. A delicate, anemic woman about thirty years old had been pregnant several times and always experienced severe and persistent nausea and vomiting during most of the time till relieved either by delivery at term or prematurely. She claimed that once at least, and I think twice, she had had pregnancy terminated artificially by reputable physicians on account of the serious character of her vomiting. I was called to see her when she was at about the second month, and I found nausea and vomiting persistent and extreme. Examination showed some congestion about the cervix, and following the practice of Dr. Jacob Price, of West Chester—which had proved successful in my hands in several cases previously—I applied a strong solution of nitrate of silver to the entire external part of the cervix. The usual medicinal measures were also resorted to, the diet being meanwhile strictly regulated. There resulted a marked improvement in the patient's condition. The vomiting was almost entirely controlled, and my visits were stopped or made only at long intervals. A little later the woman went out with a sailing party on the ocean and at the same time indulged in some particularly indigestible article of food. Naturally there was a return of the illness and, as in Dr. Dercum's case, the condition after recurrence was much worse than before. Everything possible was done again, but without avail. I had the assistance of Dr. Gadd, of Philadelphia, and at different times Dr. Franklin, of Philadelphia, and Dr. Kaemmerer, of Atlantic City, saw the patient in consultation with me. The woman was fast becoming exhausted and it was finally decided to dilate the cervix under strict antiseptic precautions, and if this did not relieve the vomiting, to proceed to empty the uterus. The dilatation sufficed of itself to bring on labor, and within a few hours the fetus, which had progressed to about the third month, was delivered. Almost immediately afterward the patient sank into a condition of extremest exhaustion, with high fever, and died in spite of all the possible measures which were resorted to for the purpose of stimulating and supporting her. She was too far gone when delivery took place to bear the additional shock of curetting and washing out the uterus, or this also would have been done.

I have been induced to report this case by reading of the exceedingly narrow escape that Dr. Dercum's patient had under similar circumstances. The question strongly suggested by these cases is: Why should we wait till our patients are so nearly moribund before relieving them by emptying the uterus? The life of a wife and mother is infinitely more important than that of an unborn babe, even when known to be alive and near full term, and to risk such a life out of consideration for a fetus in the early months of pregnancy ought not to be thought of for a moment. In my case the family demanded that an abortion be produced when I was first called, and their eagerness to have the pregnancy terminated under any circumstances probably made all of the physicians in attendance more conservative than we would otherwise have been. In a practice of nearly sixteen years this is the only parturient woman that I have ever lost, and under similar circumstances again I should certainly counsel emptying the uterus after all the other possible remedies had failed to control violent and persistent vomiting, without risking much delay.

MEDICAL PROGRESS.

Uretero-ureterostomy.—KELLY (*Bulletin of the Johns Hopkins Hospital*, vol. iv, No. 34, p. 89) has reported the case of a woman, twenty-five years old, in which hystero-myomectomy was performed in the treatment of uterine myomata. After the round ligaments and the ovarian arteries and veins had been ligated and the broad ligament opened and its parietal layers pushed to the front and back of the pelvis, a large flat vessel, rather more than a third of an inch in diameter, was seen coursing on the anterior surface of the enlarged uterus for a distance of nearly three inches. This vessel closely resembled an engorged vein, and as it apparently terminated in the congeries of vessels at the cornu uteri it was ligated in two places and divided between the ligatures. It was at once seen that the vessel was a ureter. To repair the breach the lower portion was ligated close to its cut extremity and a longitudinal incision, a little more than a third of an inch long, was made in its anterior wall. A fine silk suture was then passed through the lateral wall of the lower portion, about a fifth of an inch below and posterior to the angle of the slit, and brought out through the slit and caught in the outer coats of the upper portion of the ureter close to its margin; this suture was then carried back into the slit and through the wall of the ureter close to the initial point of entrance. A similar suture was passed at a point directly opposite. By making traction on these sutures, while holding the slit open, the upper portion of the ureter was readily invaginated into the lower. These sutures were then snugly tied. In order to avoid the danger of urine backing up through the incision the edges were sutured to the invaginated portion with ten fine silk rectangular sutures, which included only the

outer coat. The loose peritoneum in the anterior part of the pelvis was now drawn over the field of operation and attached to the posterior surface of the stump and the broad ligament by a continuous suture, except at a point where the ureter was united. Here two pieces of gauze were laid over the anastomosed ends and brought out at the lower angle of the wound, to insure drainage of the urine in case the operation was unsuccessful. The remainder of the incision was closed in the usual manner. At no time after the operation was there the slightest urinary odor detected on the dressings, and on the third day the gauze drainage was removed. The patient had no nausea or headache or other untoward symptoms and the convalescence throughout was uninterrupted. The abdominal sutures were removed on the eighth day, the wound having united by first intention. The woman was catheterized every three hours for the first day; on the second she passed urine voluntarily, and thereafter the catheter was no longer used. The patient got out of bed on the seventeenth day and was dismissed, in excellent health, six weeks after the operation.

Circular Craniectomy.—Dumont (*Correspondenzblatt für Schweizer Aerzte*, 1893, No. 23, p. 778) has reported the case of a female infant, fourteen months old, in which circular craniectomy was performed for the relief of microcephalus. The child was the first-born of healthy parents and without hereditary predisposition. The birth was normal, although the labor was somewhat protracted. The child weighed six and a half pounds, and for the first two weeks presented no abnormality. At the end of this time it seemed to stop growing and to become dull. At the end of two months it commenced to roll its eyes upward, so that only the sclerotics were visible. At the same time slight twitching made its appearance at various parts of the body. At the age of four months the twitching was attended with cries. The convulsive attacks augmented in frequency and intensity, consciousness being at times lost three or four times in succession. After such an attack the child appeared for some time exhausted, depressed, and pallid. The head was rather conical and the fontanels closed. The eyes were turned inward and upward. Not a tooth was visible in the jaws. The hands and feet were cyanotic and deformed by contractures. The child bored its head into the pillows. Crying was attended with a peculiar snoring sound, and swallowing was accomplished in jerks and with difficulty. The distance from the root of the nose to the external occipital protuberance measured nine inches, from one ear over the vertex to the other ear slightly more than ten inches. The condition was diagnosticated as one of microcephalus, with premature ossification of the cranial sutures and epileptiform attacks, and craniectomy was advised and acquiesced in. Accordingly, an incision was made in the scalp, extending in the middle line from the forehead to the external occipital protuberance. The scalp, with the periosteum, was turned back and a trephine-opening an inch in diameter was made below either parietal protuberance. From this point the bone was gnawed away with forceps and saw forward and backward until the vertex was freely movable. The scalp was then replaced and sutured and an antiseptic dressing applied. The operation lasted an hour, and was followed by manifestations of collapse, which, however, disappeared in the course of a short time. After the lapse of several days the child slept and drank better. The wound in the scalp closed by primary union, and no further convulsive attacks occurred. The cyanotic appearance subsided and the strabismus became less marked. Two months after the operation the vertex of the skull was still movable; incisor teeth had appeared in the upper and lower jaws; the strabismus had become much less marked; there appeared to be some signs of intelligence; and no convulsive attack had taken place.

THERAPEUTIC NOTES.

Caffein-chloral is recommended by Ewald (*Deutsche med. Wochenschrift*, 1893, No. 50, p. 1343) in aqueous solution for subcutaneous injection in doses of from 3 to 6 grains, in the treatment of obstinate obstipation. If necessary, the injection is repeated after an interval of two hours. As a rule, liquid stools follow in the course of a few hours. The injections give rise to no pain, although a sense of burning persists for from one to three hours at the site of the injection. Relief of the muscular pain and articular swelling of rheumatic conditions has followed the injections. Caffein-chloral is a molecular combination of caffein and chloral, and appears in colorless, shining scales readily and abundantly soluble in water. In the presence of alkalies caffein and chloroform are set free.

Methylene-blue in Beri beri.—Thur (*Gen. Tijd. voor Nederl. Indie; Schmidt's Jahrb.*, Bd. ccxl, No. 40, p. 233) has employed methylene-blue in doses of 3 grains, given twice or thrice daily, in the treatment of eleven cases of beri-beri, with excellent results. The general condition was rapidly ameliorated, while the respiration became quieter and deeper, the pulse diminished in frequency, became fuller, stronger, and more regular, and the appetite and sleep were improved. Continued administration of the drug was followed by increase in the secretion of urine and diminution of the anasarca, and a favorable influence was exerted upon the excretion of albumin.

For Influenza.—

℞.—Camphoræ . . . . gr. lx.
Tinct. iodi . . . . ♏lx.
Mucilag. acaciæ . . . . f℥iv.
Glycerini . . . . f℥vj.
Olei menth. piper. . . . ♏vj.
Syrup. zingiberis . . ad f℥iij.—M.

Two teaspoonfuls every two or three hours.

Granville, *Medical Press and Circular.*

An Agreeable Laxative.—

℞.—Sodi phosphat. . . . . ℥j.
Aquæ destill. . . . . f℥viij.
Syrup. simplicis . . . ℥ij.
Tinct. limonis . . . . gtt. xx.—M.

S.—Two tablespoonfuls, or more, as required.

Paul, *Les Nouv. Rem.*, No. 23.

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SATURDAY, JANUARY 13, 1894.

INFLUENZA.

MANY physicians have contended that influenza is a permanent visitor among mankind; that there is no year and no season of the year when a few cases of it do not come under the hands of every physician, but that it is only at certain periods, when circumstances not yet recognized combine to induce greater virulence of the poison of the disease and more widespread susceptibility among the people, that the affection is generally recognized. At other times the cases are called by various names, according to the more prominent symptoms: now gastric catarrh, now typhoid fever; now catarrhal pneumonia; now nervous fever; now bronchitis, and so on.

Conversely, it is doubtless true that in periods of severe epidemics, and especially in periods of pandemic, the name "grip," or "influenza," is applied to ordinary catarrhal affections not properly coming under that heading, so that, as was said several years ago, before the pandemic of 1889 and 1890 had once more attracted the attention of medical men in general to the disease: "To the classic paradox of the prognosis of catarrhal fever, 'the most fatal and the least fatal of all diseases' (DA COSTA), may be added a similar characterization of its diagnosis—at once, the easiest and the most difficult. The picture of a typical attack of influenza is so striking that to mistake it were almost impossible; but typical attacks are by no means so frequent, save in periods of widespread epidemics, as the irregular, ill-defined, misleading manifestations that occur without attracting prominent professional or popular attention."

Among the diagnostic symptoms upon which stress may be laid in cases of influenza exhibiting involvement of the respiratory apparatus are the following:

The amount of respiratory distress is frequently out of all proportion to the physical signs elicited upon percussion and auscultation. Resonance may be perfect, or there may be even hyper-resonance upon percussion over an area wherein auscultation fails to detect any respiratory murmur, normal or abnormal. This mechanical condition can only be explained upon the theory of SIR B. W. RICHARDSON, that the pathologic condition is a "pneumo-paresis." The alveoli are distended and contain air, yielding resonance on percussion, but they fail to alternately contract upon expiration and re-dilate upon inspiration, so that the contained air is motionless, and thus auscultatory phenomena are absent.

In other cases, while numerous abnormal sounds are discovered at scattered areas throughout the chest, yet they do not indicate a degree of involvement of lung-substance sufficient to account for the dyspnea and other symptoms of failure of respiratory function—and here again the theory of a paretic condition must be invoked to explain the phenomena. In still other cases there is an excessive sense of constriction of the chest, or there is frequent harassing and ineffective cough, only to be explained by the theory of nervous irritation. In addition to these symptoms "the chilliness, the irregular fever, the rheumatic pains in the back and limbs, the unaccountable depression, the exquisitely painful headache, the cutaneous hyperesthesia, often the precedent history of a coryza, sometimes coincident conjunctivitis, occasionally neuralgia, supra-orbital or infra-orbital—many or all of these phenomena being easily elicited upon close observation or questioning—will inform the careful physician that he has more than an ordinary "cold" to deal with.

A greater liability to error in diagnosis exists, however, when catarrhal symptoms referable to the nose, throat and chest are slight or unnoticed, and the alimentary canal or the nervous system bears the

brunt of the disease. Unquestionably many cases have been reported from time to time as instances of "typhoid fever," and much success in treatment, even in aborting the disease, has been ascribed to this, that, or the other indifferent remedy or therapeutic method, when in fact the affection dealt with was catarrhal fever of the enteric variety. Discrimination in the first few days of the attack may be difficult, perhaps impossible; yet there are many things, perhaps trifles, intangible it may be, save to the experienced observer, that may assist in the differentiation even in the preliminary stages. In influenza the tongue is not characteristic (although a peculiar pearly whiteness has been described); the physiognomy is not that of typhoid fever; enlargement of the spleen is uncommon, to say the least; while the weakness of circulation, the general depression, and the headache are greater than would be expected in a case of typhoid fever so mild in other respects. There is no typhoid odor to the breath; the temperature is decidedly irregular—perhaps much higher than would be expected in an early case of typhoid fever, perhaps quite low—but in either event subject to extreme and rapid fluctuations without therapeutic intervention. One highly significant circumstance in connection with the fever of influenza is the comparative comfort with which patients endure temperatures that in almost any other affection would be quite alarming. Though the thermometer register 105° or 106° F., the patient will be scarcely conscious that he has fever. In some cases, it is true, his head will ache tremendously, but stupor is absent and no consciousness of abnormal heat seems to be experienced. When we consider, moreover, that in some of the most prolonged and severe cases of influenza the temperature is low, and indeed frequently subnormal, it would seem that in this disease the Hippocratic maxim that fever is evidence of Nature's reaction against infection is eminently true. We have already laid stress upon the paretic symptoms affecting respiration and circulation—the great functions of organic life. With the depression of these functions depression of temperature is intimately connected, the more so when morbid sweating is a part of the syndrome.

From this a valuable therapeutic lesson may be derived. The similarity between the effects of antipyrin and the effects of influenza-poison is great; both depress vital functions by a direct blow at the vital centers in the medulla. If, then, any drug is *not* to be used in the treatment of influenza, it is antipyrin. It is true that the drug may be safely administered upon the principle of *similia similibus curantur*, in the infinitesimal doses which are proper for drugs given upon that principle; but in doses which are likely to have any effect upon the patient the use of antipyrin can only be harmful. Of phenacetin and acetanilid the best that can be said is that they are less likely to do harm than is antipyrin. Of no one of the coal-tar products can it be truthfully said that its use in the treatment of influenza is either necessary or beneficial.

Varying somewhat with the type of the symptoms, the general treatment of influenza should be conducted upon supporting and eliminative lines. Rest is the first requisite, even in mild cases; for mild cases improperly managed are likely to prove severe, or to be followed by distressing sequelæ.

The patient being put to bed, profuse diaphoresis should be induced if possible. The simplest means is to have the patient take a hot bath before going to bed and then to wrap himself up in blankets, with or without the additional use of hot air, steam, etc. Diaphoresis may be favored by the administration of spirit of nitrous ether, of potassium nitrate, or even of Dover's powder. Diuresis should be stimulated by the administration of sodium benzoate, which is the nearest to a specific drug in the treatment of influenza among the many that have been brought before the profession. It may be given in doses of from ten to twenty grains at intervals of from two to three hours. Strychnin sulfate or strychnin arseniate should be given from the first in small doses, say $\frac{1}{120}$ of a grain at intervals of from one to three hours, to be increased should the conditions seem to demand it. In many cases this will be the only treatment necessary. In others, phenyl salicylate, cinchonidin or quinin salicylate, sodium salicylate or ammonium salicylate may be used, the last-named being particularly applicable when there is pulmonary involvement, the first-named when there are enteric symptoms. In some cases a better effect will be obtained through making up the required dose of salicylates (from twenty to sixty grains daily) by a combination of several salts than through the use of any one alone. When feebleness of the heart is a prominent symptom and it is not considered desirable to increase the dose of strychnin or to depend upon strychnin alone, caffein is the most useful of the cardiants. To old per-

sons, and when pneumonic complications become severe and threatening, strychnin should be given in large doses. Under the latter conditions ammonium should also be freely exhibited, and inhalations of oxygen should be given persistently. We have seen more than one life saved by oxygen-inhalations, resorted to in time and kept up faithfully. A few whiffs of the gas will not answer; one must be prepared to waste several cylinderfuls if necessary. The value of hot applications to the chest in the early stages of the pneumonia of influenza, or of the pleurisy which is often associated therewith, cannot be too strongly insisted upon. The old-fashioned flaxseed poultice is probably the best means of applying heat to this region. It increases the comfort of the patient and favors resolution. For the relief of pain, and especially of headache, nothing has proved in our hands equal to hyoscin hydrobromate, the dose varying from $\frac{1}{200}$ to $\frac{1}{50}$ of a grain, repeated in two hours if necessary. In some cases inunction with aconitin oleate (2 per cent. solution in oleic acid) has been necessary to relieve the distressing supra-orbital neuralgia; the application, of course, is made over the seat of pain, and but a drop or two drops of the solution are employed at a time. We have said nothing of diet, taking for granted that the importance of proper alimentation is understood, but we cannot conclude without emphasizing the necessity for giving the patient plenty of pure water to drink. Alcohol is necessary in a few cases, and, when necessary, it should be given in such doses as seem to be indicated. Its routine and excessive administration in every case is to be strongly deprecated.

THE SANITARY BEARINGS OF SMOKE-NUISANCE.

SMOKE is unquestionably a great nuisance. Those who live near abundant supplies of smokeless fuel, as is the case in most of the larger cities on the Atlantic seaboard, find the sooty atmosphere of Western cities quite distressing. Apart, however, from the actual discomfort, it is worth inquiring if any direct injury to health results from constant living in a smoky atmosphere. Even assuming that the solid particles of the soot are retained in the lungs, we can scarcely assign to such particles a power to develop specific disease. We are, of course, not indifferent to the dangers of dust as a conveyor of contagion; but it is in the dust of human origin, indoors, and of manurial refuse, out of doors, that we will find the microbes of tuberculosis, pneumonia, and diphtheria. The minute masses of carbon or of solid hydrocarbons which pour out of the furnaces in which soft coal is used are thoroughly disinfected by the condition of their formation, and they are not likely to acquire any infection by passing through the air.

Nevertheless, we can scarcely afford to look on smoking chimneys as of no sanitary moment. Everything which diminishes the force of sunshine, or which discourages cleanliness, must be regarded with suspicion. Now, the smoke-nuisance does both these, and works unfavorable conditions also indirectly, for the deprivation of sunlight compels a resort to artificial light, and this at best is not without insanitary influences. Moreover, in the ordinary form of artificial light—gas-light—a material vitiation of the air occurs, not only by the removal of oxygen and addition of carbon dioxid, but a notable proportion of sulfuric acid is usually produced, for it appears from recent researches that in the form in which sulfur commonly occurs in coal-gas it burns directly to sulfuric acid, and not to sulfurous acid, as was formerly supposed. Thus there is formed a gas highly irritating to the lungs, and likely to bring about a catarrhal condition which will render the lung-tissue less resisting. Motives of economy will also lead to efforts at conducting work without sufficient light, and thus will come injury to the eyes.

It does not appear, however, that these circumstances materially increase the mortality. London and Chicago may be taken as examples of smoky cities, but the death-rate in both is quite satisfactory. The death-rate in the latter city was formerly quite high, but this was due to typhoid fever, which has been somewhat abated by a better water-supply. It is, however, a dangerous system of reasoning to assume that because sanitary conditions are good they could not be improved. We may admit that the statistics of London and Chicago show that no very serious addition to mortality is due to constant smokiness, but it is not unreasonable to suppose that these and all similar cities would be benefited by a clear atmosphere.

So prominent has this consideration become in London that *The Lancet* has caused a scientific commission to inquire into the best method for smoke-prevention. It is to be regretted that the names of the members of the commission are not given, and also

that there seems to have been a very close association between it and a certain gas-manufacturing corporation; but the general conclusions are sound and the scientific details interesting. The commission favors the use of gas as fuel, and shows that under proper construction of stoves and ventilators no dangers to health ensue. The rapid progress in applied science at the present day is well shown by the fact that this report leaves out of consideration that form of heating which is already practicable, and which bids fair at an early date to supplant to a great extent the direct use of fuel, namely, electric heating.

We can, indeed, foresee that at no distant day such energy as is to be obtained by coal will be produced at the mines and transmitted to centers of population in the form of electricity, to be again converted into light, heat, and power. The sanitary gain that will thus result will certainly not be inconsiderable. The avoidance of smoke, ashes, deleterious gases, bulky fuels, and care of furnaces must certainly tend to increase the duration of life and to make it more enjoyable.

THE NEED OF PUBLIC MEDICAL LIBRARIES.

There are few things that a man can do so certain never to result in aught but good as the founding or endowing of a public library. Neither is there a surer way than this to secure honorable fame and an immortality of good repute. If this is so as regards more or less ephemeral general literature, how much more is it true of medical literature? Here it is of the very first importance that reference to the literature of the past shall be easy of access to every worker in medicine. But in the face of this self-evident truth there is another fact no less sadly self-evident: the remarkable want of medical libraries. Few can realize the value to the profession, and through the profession to the world at large, of such libraries as that of the Surgeon-General at Washington or that of the College of Physicians of Philadelphia. But outside of these two noble institutions there are hardly any other first-class medical libraries in the United States. There should be thousands. The result is that every physician finds it one of the severest taxes on his scanty earnings to supply himself with but a portion of the books and periodicals he should be able to consult.

There are many cities of our country whose physicians, instead of establishing a common library, spend more money independently and unsatisfactorily for books than would be required to provide a satisfactory library for the entire local profession. There are but few physicians who can afford to buy the great encyclopedias and reference-books wherein are gathered the sum of medical experience. These a public library could supply.

And what a means of labor-saving to these physicians such libraries would be, and indirectly what professional and scientific help they would yield! The "unique cases" would find their proper pigeon-holes and be recognized as one of a hundred other "unique" cases. The inventors and discoverers of a useless experiment, of a new drug, of a novel treatment, or of a clinical mistake, would often be spared unnecessary pains and costly disappointment by a glance at a good catalogue or at the *Index Medicus*.

Professor Nicholas Senn, of Chicago, has lately presented his great collection of medical books to the Newberry Library. There is nothing that will in future more redound to his fame than this splendid munificence. All honor and gratitude to him! We take pleasure in also recording the fact that Dr. Robert Battey, of Rome, Ga., the distinguished gynecologist, a few months ago offered his private library, consisting of about a thousand volumes, to the Governor of Georgia as the nucleus of a State library to be established at Atlanta.

Philadelphia awaits some such generous gift to double the usefulness of her already great medical library. Every city of the land also needs such gifts. Even the smallest cities could combine, incorporate, and make the nucleus of a library, and thus render it possible for legacies and gifts to be offered, with a certainty that the generosity would be cared for and put to the uses designed. As the older physicians, the revered masters of the guild, who have attained competence or even moderate wealth, one after another, foresee the approaching "great silence," they will thus be glad to remember with gifts of books or money the younger men into whose hands they must yield their office; and, as we have said, there is no better way in which they can do their profession and themselves the honor each deserves than to put at the service of their heirs the gathered and systematized wisdom of the workers of the past.

Let us found new medical libraries, and let us fill the empty shelves of those already founded!

EDITORIAL COMMENTS.

"Blue-Blooded Aristocracy."—There are a great many expressions in our language, and in every language, that seem to have no meaning. One wonders why, generation after generation, people keep repeating them, everybody at the same time wondering how they came into existence. It has been the delight of antiquarians delving in the musty records of the past, to hunt out some custom or fact that throws light at once upon the life of the past and fixes in the minds of the present a luminous explanation of the origin of some philologic curiosity. Sometimes the explanation is not forthcoming, because, lying so near at hand, it cannot be found by antiquarians. There is one such expression that by its very name implies a physiologic or pathologic origin, and yet, so far as we know, has never been explained or sought to be explained as due to any physiologic cause. This phrase, "blue blood," as applied to aristocratic folk, seems a palpable absurdity, because, physiologically, of course, the constituents and color of the blood of aristocrats cannot differ much from that of working and plebeian people. How, then, did it come into use?

Every oculist of any alertness and closeness of observation-powers must have daily noticed, as school-imprisoned and behoused patients come into his office, the fact that in women, girls, and children, severe and long-continued eye-strain produces leanness and pallor of the temples, with the blue veins plainly visible at ten feet distance. Sometimes these blue lines of the temples—as indicative of eye-strain as those of the gums are of lead-poisoning—curl down beneath the eye and along the cheek. Every oculist must have also noticed how soon after getting proper spectacles the temples fill out, the blue lines disappear, and the whole expression of the eyes and face changes. Pain, suffering, malnutrition, at once disappear. The appetite, especially for breakfast, long lost, returns, sleep is quiet and refreshing, and growth recommences. A tremendous difficulty has been overcome and life, as it were, is again resumed.

In the Middle Ages especially, but also in modern times, women, girls, and children of the upper classes have been housed more than the men and older boys. This housing necessitates continuous employment with books, sewing, or other ocular labor at near range. The ametropia that with out-of-doors living can be borne by the compensatory powers of the organism cannot be endured when there is added the extra burden (and, evolutionally, the abnormal function) of continuous accommodation or work at near range. Hence anemia, the pallid skin, the "pinched eyes," the blue or the swollen veins of the temples, blue circles about the eyes, etc. Heredity of these abnormal eyes—a most common fact—coupled with the inherited subnormality of general nutrition that results both from the ametropia and the lack of physical exercise, does the rest of the work, and the daughters and wives of the castle-owners and of the rich are at once seen to be "blue-blooded." But the explanation shows the fact to be a sign of disease and a thing to be ashamed of, not, by any means, one to be proud of.

Promised Foot-ball Reform.—To one who can read between the lines, the actions and arguments of the foot-ball advocates are furnishing a constant source of excellent amusement. They are bound to take note of the arguments moral, educational, and physiologic, against the game as it has existed, but more especially are they forced to consider the profound wave of popular indignation rising against past excesses. Instead of a means of attraction of students it is quite possible that the game may cause subtraction. In this dilemma a way out has been found by reluctant acceptance and forced advocacy of reform. Reform is promised, but the funny part comes in when we note the ill-concealed disgust at the nauseous dose. However, the critics of foot-ball excess may rest satisfied with their work, if reform of the rules be really brought about, and if it be such as to do away with the evils of the game. This will be the critics' work, and this is all they have wished. "Reform within the party" was not tried spontaneously, and has only been promised by force of compulsion, criticism and popular feeling from without. The critics may also point out that the speciousness of the logic so far offered in defence is apparent in the fact that every line of the argument could be applied in favor of boxing. Indeed, in the late magazine defenses of the game every time the word *foot-ball* occurs, it could be replaced by the word *glove-fighting*, with equal and even with sounder logic. The difference of acceptance of the logic consists solely in the fact that foot-ball is the fashionable fad of the day and prize-fighting is not. There will never fail able, at least plenteous, defences of the customs and demands of the *Zeitgeist*. Every English Bishop, the powers, votes, and logic of the Established Church (by name, of Christ, and of Religion) arrayed themselves against the abolition of slavery—all of which does not affect the fact that slavery was wrong, unchristian, and irreligious. To flatter the *Zeitgeist* and "the powers that be" is pleasing to that fickle and faithless tyrant, and, temporarily, very, very profitable to the flatterer. But, again, flattery, applause, profit, and honor cannot alter the facts that, as carried on of late, foot-ball has not been in the interests of true athletics or genuine physiologic culture, and has been very far from furthering the clear purposes of education and of educational institutions. Hence when the advocates of the game (however grudgingly and slurringly) acknowledge the past abuses, and promise such reform as will do away with these abuses, we warmly cry them welcome, and beg pardon for any "excess of zeal" on our part. We are all, it seems, in favor, and most heartily too, of the best and most perfect development of the human body; but we protest that this must be consistent with, nay, subordinated to, the best and most perfect development of the human mind.

The Source of Some Therapeutic Enthusiasms. — It has often been noticed what reckless belief in a therapeutic agent is aroused by self-interest. We have before us a circular that tells the story of both the zeal and the motive in a charmingly naive manner. The title announces the absolute curability of epilepsy by means of a certain drug that, as we read, we judge can only be procured from the author of the circular. The absolute cure is founded upon the author's experience in two cases of cure, one of which has lasted three months. On one page we are assured that the plant that yields the drug

is not a nettle; on another page it is called a nettle. Our esteemed fellow-townsman, Dr. Guy Hinsdale, is said to be in charge of the State Hospital of the only State that provides for its epileptics, viz., New York, and that therefore "he treats more cases of epilepsy than any other medical man in the country." It is not, of course, pretended that Dr. Hinsdale has the most remote connection with the "treatment," the drug, the drugger, or the institution-founder. His name is merely mentioned to give dignity to the circular. There follow a number of reports of cures by physicians who have ordered their stock of the drug from the enthusiastic essayist.

Then comes the funny part: It is the drug alone that cures, and yet "it is impossible to treat epilepsy successfully at home or in private families," and hence "I have opened a large sanitarium, with all modern improvements," and so on, "where the patients that have been unsuccessfully treated by Weir Mitchell and other eminent physicians," etc. Don't let us hear anything more about a lack of humor in physicians. However, there is bitterness at the end of the laugh in thinking that such stuff is from a "regular" irregular, that it was all first published in a so-called medical journal, and that the fellow will probably make much money.

Municipal Supervision of the Milk-supply and the Meat-supply.—The little town of Mansfield, Ohio, has set an example in municipal sanitation that other and larger cities might follow with advantage. From the Fifth Annual Report of the Health Department, covering the period from March 1, 1892, to February 28, 1893, the mortality rate was 10.5 per 1000, a reduction of more than 3 per 1000 as compared with the preceding year. As the result of recent legislation, the milk-dealers of the city are all under the care and observation of the Health Department, and when it has been necessary to do so, such regulations have been prescribed as to the keeping of the cows, the care of the milk, and of the necessary utensils, as have been thought best by the department in the interest of the welfare of the community, and when milk-dealers have failed to comply with these instructions they have been promptly prohibited from selling milk in the city. On the other hand, when there existed a suspicion that the milk was not pure, specimens were examined, and, if found impure or diluted with water, the further sale was interdicted until the defect was remedied. Meat-dealers are also by law required to register with the Health Department, under whose control they are, and whose duty it is to look after the sanitary condition of the markets and slaughter-houses, wagons, and all of the necessary paraphernalia. In case a meat-dealer does not comply with the requirements of the Health Department, or is found selling diseased or spoiled meat, his permit can be revoked.

Meat-extracts. — *Food and Sanitation*, an English journal devoted especially to exposing adulteration, has recently been discussing the composition of some of the well-known meat extracts. The general conclusion that such preparations have little positive food-value is, of course, not new, as physiologists have recognized this fact for a long while, though they conceded to them a certain amount of stimulant quality. It is interesting, however, to note some of the analytic data furnished by the journal. An "Essence of Beef" is found to contain over 91 per cent. of water, and not quite 4 per cent. of albuminoids and peptones. The highest percentage (23.87 per cent.) of the latter principle is found in "Bovril," "Liebig's Extract" coming next (9.55 per cent.). In all the samples, the crystalline principles, kreatin, etc., are the most abundant solids, and these are not regarded as appreciably nutritious. Attention is called to the high selling-price of these preparations, which makes them enormously expensive forms of food. Incidental to the discussion of the question, *Food and Sanitation* also notes that Mr. Maybrick was fed on one of these preparations, and was possibly starved to death. Some glycerol found in Mr. Maybrick's house had arsenic in it, and it is stated on the authority of a Birmingham chemist that a considerable quantity of arsenical glycerol was sent into England from Germany. This last statement seems very remarkable, and if true, suggests a most dangerous and criminal adulteration.

An Argument for Cremation, offered by our esteemed English contemporary, *The Medical Press and Circular*, is that in cases of apparent death, "cremation would obviously dispose of any chance of a person being buried alive, as the first touch of fire would effectually rouse the victim of any cataleptic slumber." In view of the method of practical cremation one experiences a creepy mingling of feelings of ghastliness as to the fact, and of ludicrousness as to the editorial logic. In close observation of facts and infallible induction from them, this is almost on a level with our contemporary's "arguments" against spelling-reform and about as mirth-provoking.

SELECTION.

THE MEDICAL PROFESSION AND THE HOSPITALS.

This is the time of year when the hospitals of the city recite their deeds to the public and ask for money to carry on their work. It is a time when the question of the utility of this work is presented eloquently to everyone. As a rule, New York responds to the amount of about $50,000. No kind or degree of solicitation is able to raise the sum much above this, and it has in the last year fallen off slightly. New York has forty-seven hospitals, perhaps more if we include the private and semi-private institutions. These hospitals have eleven thousand beds, and the number of patients treated annually reaches up toward a hundred thousand. The number of hospitals and patients treated in them is increasing rapidly. It is safe to say that the amount of work done has doubled since 1875, and there is no sign of a decrease. On the contrary, during the past year large sums of money have been expended in erecting new hospitals or extending old ones.

The same rapid growth has been noted and commented upon in other cities, notably Cincinnati and Philadelphia. In the latter city there are, according to The Medical News, thirty-seven hospitals with four thousand five hundred beds, costing $1,300,000 annually. It cannot be denied that the medical profession has begun to look upon this movement somewhat critically, not to say coldly. This is due to several causes. First of all, the

treatment of medical men by hospital managers has always been arbitrary, and attended with friction and disturbances. Hospital authorities have heretofore often regarded the medical staff as a kind of necessary evil. They have taken advantage of the fact that physicians have desired to become attached to hospitals, to get as much as possible out of them with as little return as possible. The theory that a visiting staff should be paid for its work has been ridiculed, on the ground that plenty of men can be found who will work for nothing. This theory has a certain economic basis, we admit, but it is not an absolute one, otherwise why should it not be applied to positions of honor everywhere. We could get plenty of Congressmen, Senators, Presidents, and even judges, to serve for practically nothing. But still a more cogent reason for the growth of an antagonism to hospitals is the way in which they deal with the question of charity patients. It is becoming more and more the habit for surgical operations to be done in hospitals. Even well-to-do patients are sent there, paying perhaps nothing, or at any rate a fee very inadequate considering their means and the services rendered. As THE MEDICAL NEWS says: "Formerly a young doctor had a chance of being called to attend an accident case happening in his neighborhood. Many a physician has won his way into a fair practice through the skill shown in such emergencies. But to-day the patrol wagon or the ambulance is as speedily obtained as the nearest doctor, and the case is whirled off to the hospital. It is treated in the dispensary if a slight case, or sent to the wards or a private room, according as the financial condition of the patient seems to warrant. We have known rich men to pay $25 a week for a private room in a general hospital, and demand extra attention of resident and visiting physicians, without ever thinking of remunerating one or the other."

In the smaller cities the case is, we are informed, even worse. We have met well educated and experienced practitioners who have done much surgical work, and done it well, until the building of some small hospital, which is generally under some special political or religious auspices. This killed their surgical work at once. The spread of the hospital system is thus tending to throw a larger amount of medical work every year into the hands of corporations, and the trend is toward a nationalization or municipalization of medicine.

Now, this will certainly be disadvantageous to the physician, for it lessens the amount of his remunerative work, and tends to lessen the general skill of the practitioner. It will make the few skilful, the many unskilful and dependent. For all this physicians will have no right to complain, if the general effect is to be beneficial to the public. If it results in enabling more people to get better medical service at a lower rate, without pauperization or loss of self-respect, then we as good citizens must submit to the inevitable.

In our opinion, however, this will not be the result. If the rewards of the profession become less, its honors more uncertain, a poorer class of men will enter it. If advancement is difficult, ambition will be crushed out. In the end, therefore, the public health will be in the hands of a spiritless and mediocre bureaucracy. Surgeons will be but the machinists of corporations, and physicians clinical clerks to coöperative institutions.

We must deplore now, therefore, as we have in the past, the present tendency to the institutionalism of medicine.

The way out of it, as it seems to us, has already in a measure been begun. It consists in physicians themselves having charge of their hospitals and dispensaries, and in controlling their charitable work. Already two of our teaching institutions have their own hospitals; many, perhaps most, of our eminent surgeons have their private hospitals. The association together of a few physicians and surgeons in good practice enables them to equip a hospital of their own, and renders them independent of the favors of lay hospital-boards.

Perhaps this is not the only or the best way to fight against medical institutionalism, but it seems the most practicable at present. At the same time physicians, as a body, should demand more just treatment from hospital authorities, and should protest against the establishment and support of superfluous medical charities.—*The Medical Record*, January 6, 1894.

REVIEW.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN, FOR THE USE OF STUDENTS AND PRACTITIONERS. By JAMES NEVINS HYDE, A.M., M.D., Professor of Skin and Venereal Diseases, Rush Medical College, Chicago. Third edition, thoroughly revised and enlarged. Pp. 802. Philadelphia: Lea Brothers & Co., 1893.

THE two previous editions of this work met with such general favor, both in this country and abroad, that we are not surprised that a new edition was so soon called for. The author states in the preface of the book before us that thirty-five new diseases have been considered. We find that the chapter on tuberculosis has been rewritten and enlarged, and that lupus vulgaris has been relegated to a position among the verrucous and other cutaneous manifestations of tuberculous infection. Among new chapters may be mentioned those on pityriasis rubra pilaris and keratosis follicularis; also, of less importance, those on epidemic dermatitis, actinomycosis, xanthoma diabeticorum, pemphigus vegetans, scarlatiniform erythema, and the parasitic forms of eczema. The new and original illustrations consist of five plates and twenty-two woodcuts.

It will thus be noted that much new and, we may add, valuable matter has been introduced, and after a careful perusal of the pages the conclusion is reached that the author has put forth a sound, practical, good work, a better one even than the previous edition. Quotations from the authors of all countries, but especially from our own, are liberally made use of, with numerous references, which add very much to the value of the book. On every page may be noted a frank expression of the author's own views on the many problems that are continually presenting themselves for solution, but nowhere do we find any trace of dogmatism or of undue self-assertion. As a result, we have a work written in the best possible style, which must commend itself to all. It may be added that Dr. Hyde is well known at home and abroad as an accomplished physician and a dermatologist of large experience. We take

pleasure in heartily commending his work to the profession. The field of dermatology has grown to such large proportions that no one but the educated and well-read specialist can now successfully cover the ground. If we were to make any criticism, our remarks would concern the title-page only, and we should say that so elaborate a work as this must appeal to the physician rather than to the student, who, as a rule, has difficulty in mastering even the rudiments of dermatology. It is a physician's and not a student's book.

A few excellent photographs and some other illustrations are introduced to portray certain diseases from a clinical point of view, while numerous woodcuts are made use of to explain the pathologic anatomy of some diseases. It is quite impossible to illustrate completely a work of this kind, dealing as it does with considerably over a hundred distinct diseases. The author, however, has made the best and judicious use of the pictorial material at his command, which, in most cases, is above the average in quality. The anatomy of the skin is particularly well illustrated.

NEWS ITEMS.

The Ohio College Association against Foot-ball and the Intercollegiate Games.—The following resolutions were adopted by the Ohio College Association at its meeting at Delaware, Ohio, December 28, 1893:

"First. In common with all educational authorities, so far as known to us, and in common with the press of the country and the opinions of our patrons, we deplore the roughness and exposure to injury which characterize the game of foot-ball as at present played, and urge the measures of reform in its rules and methods which we are glad to know are being considered in some influential quarters. And we furthermore suggest to the authorities of the colleges we represent to consider the propriety of suppressing the game unless the reforms be made and observed.

"Second. We would place on record our heartiest protest against the intercollegiate athletic games so far as they entail needless expense, so far as they interfere with study, so far as they tend to promote professionalism, and so far as they introduce an unwise competition, and we would recommend that each college of this association consider the question of the prohibition of the games.

"Third. We nevertheless heartily, and as the result of experience and observation, approve of the utmost exertion to secure thorough physical development for our youth in college by the most careful and scientific methods.

"We believe that the gymnasium furnishes a broad and sufficient basis for that pervasive athletic culture which those need who are to do life's work in directions of mental effort, and that sufficient variety can be found in the field-days and relative out-door sports with some military drill as an adjunct, and that ample interest can be secured by intercollegiate competition to obtain the most perfect results in the most agreeable manner."

This report was a compromise report substituted for the majority report of the Committee on Athletics and the Gymnasium; the majority report is described as having been "broad and sweeping" against all intercollegiate games of foot-ball and base-ball.

Prize of the American Neurological Association.—The American Neurological Association offers a prize of $200 for the best essay on any subject connected with neurologic science.

This competition is open to physicians who are legal residents of States in North and South America.

Essays must be sent to the Secretary of the Association, Graeme M. Hammond, M.D., 58 West 45th Street, New York City, on or before the 1st day of May, 1894.

Each essay shall be accompanied by a sealed envelope containing the name and address of the author, and bearing on the outside a motto, which shall also be inscribed upon the essay.

Essays shall be type-written, in either the English or French language, and with the pages securely fastened.

The Council of the Association reserves the right to reject any or all essays judged unworthy of the award.

Each essay must exhibit original research, and none will be accepted that has previously been published.

A Hospital for Contagious and Infectious Diseases in East Orange, N. J.—Articles of incorporation of the East Orange Hospital for Contagious and Infectious Diseases were filed at East Orange, N. J., on January 2, 1894, by Dr. William B. Graves. The purposes of the Association, as defined in the articles, are the care and cure of sick persons, especially those sick of infectious and contagious diseases, the training and education of persons to act as nurses, and the assistance of the needy poor of East Orange.

A Special Week in Diseases of the Heart and Lungs.—The Philadelphia Polyclinic has arranged to devote the week commencing January 22d to a series of lectures and demonstrations dealing with the diseases of the heart and lungs, with relation to their etiology, pathology, diagnosis, and treatment, special prominence being given to practical points of every-day utility.

A Four Years' Course in the University of Minnesota.—It is officially announced that the Board of Regents of the University of Minnesota has extended the course of study in the College of Medicine and Surgery from three to four years of eight and one-half months' duration. The new schedule of requirements will become operative in 1895.

BOOKS AND PAMPHLETS RECEIVED.

Report of Cases of Operative Relief of Endocranial Hemorrhage. By W. H. Hudson, M.D. Reprinted from the Annals of Surgery, 1893.

Tetra-Ethyl-Ammonium. A New Solvent for Uric Acid, Discovered at the Edison Laboratory. By Frederick Peterson, M.D. Reprinted from the New York Medical Journal, 1893.

A New Instrument for Controlling Tonsillar Hemorrhage. By H. Hoyle Butts, M.D. Reprinted from the Medical Record, 1893.

Hepatic Abscess, with the Report of a Clinical Case. By W. Blair Stewart, A.M., M.D. Reprinted from the Medical Bulletin.

Heredity: its Relationship to Mental Disorders. By Alex. L. Hodgdon, M.D. Reprinted from the American Medico-Surgical Bulletin, 1893.

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ORIGINAL ARTICLES.

INSANITIES CHARACTERIZED BY DOMINANT CONCEPTS: WITH PRESENTATION OF CASES OF AN UNUSUAL FORM.[1]

BY ALLAN McLANE HAMILTON, M.D.,
OF NEW YORK CITY.

I WISH this evening to say a few words about the form of mental disease that is characterized by the continued existence of one or more dominant concepts which so influence the mental habit of the individual as to lead to the expression of fixed ideas that do not ordinarily rise to the dignity of delusions. Much has been written about this form of insanity, and it hardly seems necessary to refer in detail to the descriptions of Continental and American authorities who have given it the names of *Folie de doute*, *Grübelsucht*, and *Insanity of doubt*, or to the exceedingly curious and bizarre actions and utterances of its victims; suffice it to say that the imperative conception that enters into the production of *doubting insanity*, as Coombes-Knapp suggests, "plays as important a part as the delusion does in the genesis of paranoia."

It is my purpose more particularly to consider the clinical features of this form of insanity, rather than the psycho-pathology of the disease, which has received ample justice, especially at the hands of Knapp, Spitzka, Krafft-Ebing, and the earlier writers. In 1885 I described the psychosis, giving it the name *introspective insanity*, and defining it as a "vague condition of mental weakness in which there is slight derangement of the intellectual powers, yet a decidedly marked enfeeblement of the will, and excitement of the emotions of a more or less limited kind." Since then various writers, although differing somewhat in their calculations, have regarded it as a low grade of *degenerative insanity*, and Spitzka calls it an "abortive monomania." Westphal and Krafft-Ebing are decided in their opinion that it is a variety of *Verrücktheit*, while American writers, among them Cowles, are not disposed to regard the affection as one due to hereditary influences. My own experience, which has been considerable, has led me to the conclusion that in the majority of patients the malady is an insanity of evolution, and like paranoia it appears in subjects who present not only a history more or less pregnant with transmitted predisposition, but not rarely stigmata.

There are undoubtedly two forms of the disease: a respectable minority in which the persistent conceptions are limited in expression and form, and are either the exaggeration of a weakness that many normal individuals at times present, or are transient symptoms of hysteria, and often disappear under moral or medicinal treatment; and a second form which is a degenerative disease and usually incurable.

Although an attempt has been made to apply characteristic terms to mental vagaries of patients presenting this disorder, it is impossible, except in a general way, to differentiate them, although certain cases may be said to be dominated by groups of ideas, while at other times we find an association of imperative conceptions. The word "mysophobia" has been coined to designate that form in which the patient is in constant fear of contamination, and on every conceivable occasion washes his hands. "Délire de toucher," as we know, was the term applied by Le Grand de Saulle to subjects who felt impelled to touch certain objects; "agoraphobia" and "claustrophobia" to certain morbid fears of place, but like every other insanity with progress there is likely to be, sooner or later, a complex manifestation.

I have of late seen several cases that are rather unusual, for they implied a certain doubt of responsibility, or rather a fear upon the part of the subjects lest others should suffer from what they believed to be a constantly unperformed duty. This was the conspicuous feature of the insanity of an individual whose case I am about to relate, but it was connected with the mysophobia of Hammond, and a certain kind of repeated calculation, thus binding the third, fourth, fifth, and sixth clinical types of the insanity of doubt which appear in Ball's classification:

The patient was a man of thirty-five, presenting the stigmata of defective evolution. He was markedly dolichocephalic, his teeth were irregular, his forehead retreating, and his muscular motility impaired. His family history was essentially neurotic. His mother, after a life passed as an extreme fanatic, ended her days in a lunatic asylum. His father drank immoderately, and died in an asylum. One of his brothers was intemperate, and his sister was hysteric and neurasthenic, while one

[1] Read before the Neurological Section of the New York Academy of Medicine, October 13, 1893.

of his maternal uncles was also a drunkard. He had for several years been a prominent figure in the town in which he lived, and had devoted himself to prohibition, his enthusiasm being expressed in constant litigation and self-glorification. His entire life had been modelled upon plans laid down by social reformers whose teachings were bad, and marriage guides and books upon domestic medicine played a great part in shaping his home-life. In spite of his peculiarities, he is a successful business man, and has saved enough to live in comfort without helping his brothers, who are his partners, in the management of their business. His manner at the time of his visit was very hesitating and full of indecision. There was much hesitation in telling his story, and in answering my questions he repeated himself frequently. He fully appreciated his mental state, and suffered very great agony of mind and want of faith in himself.

His active mental unsoundness had lasted for several years, and began by a gradual fear of defilement from contamination. It was reasonable enough at first, and simply followed acts that naturally required subsequent resort to soap and water. But this increased so that he now washes his hands from thirty to forty times daily, and always does so after handling money. The impulses that compel him to calculate are shown almost entirely in business matters, although his habit is now to weigh all coin that he receives or gives out, and this he has done for the past two years. The question of the honesty of others does not seem to figure largely in this procedure, for he weighs the money which he gives to others and counts the bills several times, often following the recipient several times in the day to know whether the amount he has paid is correct. He carries scales with him, not daring to trust himself without them, and while admitting the irksomeness of his bondage, suffers intensely if he forces himself to place them beyond his reach. In his efforts to escape the imperative impulse, he often asks his brothers to take charge of his business, and he has finally been obliged to leave everything in their hands.

Some time ago his imperative conceptions took another form, which consisted in the belief that paper, pieces of tin, scraps of iron on the sidewalk, street, or elsewhere, would do injury for which he would be morally, if not legally, responsible if he did not remove them. Paper upon the road that might frighten horses, scrap-tin that might wound them, loose cobblestones and other objects, he would constantly gather and put out of harm's way. He was so dominated by his morbid fears and the possible consequences of neglect upon his part, that he refused to sell nails to his customers without removing the splints, and if the nuts upon the bolts he sold were loose he would screw them up. He would question purchasers as to the possible harm that might have occurred, and upon one occasion, when he went to Long Branch for his vacation, after an hour of anxiety and doubt upon the steamboat, he turned back at Sandy Hook, to remove a banana-skin he had passed without picking up on the sidewalk in New York.

His morbid fears were excited by any object which might do harm, matches, combustibles, and sharp tools being included, and he was finally obliged to seek new employment, taking charge of the bill-collecting part of the business. There was not in his case anything that might be regarded as a delusion. His relations with everyone, except the liquor-dealers, were pleasant. He slept well as a rule, but suffered from insomnia and disturbed digestion only when he underwent a peculiarly distressing period of doubt.

I have met with two examples of insanity which may be said to belong to this class, a description of which I have so far been unable to find. Its peculiarity consists in the fact that the subjects have a fixed but temporarily removable belief that certain parts of their bodies are larger than they should be. So marked is the mental derangement, and so clear-cut is its expression, that there is no reason why it should be confounded with either hypochondriac or well-marked delusional insanity. It is common to find sexual hypochondriacs dwelling upon their belief in an alleged atrophy of the genital organs, but we never find any complaint in regard to enlargement of any other part of their body. The declarations of the patients I have seen could not be accounted for by sensorial delusions, such as exist in sensorial Verrücktheit, because there was no difficulty in making one of them admit by reasoning that there was nothing abnormal about him. The second case, however, so closely approached actual delusional insanity, although the behavior of the patient was at first simply that of a doubting lunatic, that the case must be regarded as crossing the border-line, or approaching the extreme type of hypochondriac paranoia, for he acted upon his delusions in a very deliberate manner.

The first subject is a man of thirty-six. His father and mother had highly organized nervous temperaments, but there was no history of insanity or of intemperance in the family. He is impressionable and eccentric, although a good man of business, having charge of a large estate. He has never suffered from any special form of nervous disease, but for years he has been troubled with insomnia, and has flatulent dyspepsia. His sexual appetite has always been marked, and his fancies are extravagant. He has for many years had an idea that his hands are larger than they should be, that they are deformed, and that people are constantly noticing them. They are, in fact, of average size, not out of proportion to his height and build, and he wears a number seven-and-a-half man's glove. He rubs and feels of them constantly, compares them with those of other persons, and when riding in public places, or wherever he is likely to be the subject of observation, he hides them and eagerly watches to see whether he is the object of attention. So continually is his mind engaged in this way that he finds little pleasure in life and has practically given

up his business, and came to me after having seen many other physicians, who were unable, as I was, to reason him out of his trouble. He fully realizes the false nature of his hallucination, but is unable to antagonize the insistent idea. He has upon two or three occasions been prompted to commit suicide, because of the persistence of the mental state which he has been unable to struggle against.

The second case is one of far greater interest, because the patient has really acted upon his belief that his nose is much too large. This man consulted me about four years ago, and had been sent by his physician to see if it were possible for me to dissuade him from resorting to surgical measures which he had already arranged for. He came of nervous stock, and had all his life been eccentric and erratic, and physically showed the stigmata of a defective nervous organization. He had been known by his associates as "queer," and upon one occasion, at a picnic, had indulged in disorderly behavior and purposeless antics that were not due to alcohol, but were imperative and without meaning.

Some time before I saw him he went about among his friends, asking them whether they saw anything queer about his nose—whether it was not too large, and a number of similar questions. His friends either laughed at him or assured him of the conventional proportions of that organ, but he continued to go from one to the other, and finally sought a surgeon, who removed a piece of the septum, with some resulting reduction. However, his peace of mind and satisfaction were short lived, and he very soon insisted that the knife had done no good. He was induced to go to his own physician, who in vain tried to dissuade him from any further attempt, and advised him to see me.

There was nothing about his nose that was at all abnormal, and its proportions, while generous, were not too great, and with this idea I strove to impress him. He not only resented my advice, but took occasion to inform me that the ears of his wife were larger, he thought, than they should be, and that after the second operation he proposed having her consult the surgeon whose aid he had previously sought.

The second operation was performed, with results which were scarcely satisfactory, and I subsequently learned that though he has so far not again adopted surgical measures, he still refers to his looking very different from other people.

The subjects of doubting insanity, according to several writers, are supposed to be chiefly women, and this has been my experience so far as the mild forms are concerned, but in those examples in which the disorder has been prolonged, the majority of patients are men. It seems to be an insanity of early manhood, and I cannot recollect a case that developed after the fortieth year. It sometimes, though very rarely, begins at puberty, but when it is found at this time of life it must not be confused with the introspection of pubescence, or the expansive insanity of youth. I have seen one case, in a boy of nine, sent to me by Dr. Polk, who for nearly a year manifested a very profound *délire de toucher*, but this is the only case of the kind with which I am familiar which was presented before the eighteenth year.

Willie[1] reports the case of a girl about twelve years of age, whose insanity of doubt compelled her to minutely examine the things she ate, her trouble, later, taking the form of an unreasonable and constant fear that a window would fall upon her or upon someone else. There was an opening in the street which so disturbed her by reason of her anxiety and dread lest she or someone else should fall into it, that she pestered the police that it might be filled in. Whenever she saw matches she felt compelled to light them and to set fire to the draperies about her, although she knew the consequences of such an act and resisted.

Westphal[2] reports another youthful case, a girl of fourteen, who showed queer compelling emotions when undressing for bed. These were disorderly and explosive, and were indulged in after long hesitation and much struggle to avoid them. She was at times compelled to articulate the words "na na," and said that when she was engaged in any action she was sometimes obliged to stop precipitately, when the concept arose, and although she tried to refrain, was forced to repeat these syllables. She presented the *délire de toucher*, which afterward assumed a more insane significance, for she was compelled, according to her statement and evident sincere belief, to touch certain objects to avoid impending evil or thought. At times she would have to whisper to get rid of an unpleasant thought, and if she resisted she would become so nervous that she would scream aloud the annoying syllables.

A few months ago a boy of fourteen was sent to me by Dr. Mack, of Elizabeth, who presented a form of this disorder which I believe to be unusual, and which was due to improper religious training in a subject of defective organization. He studied hard and was ambitious, and, as a consequence, developed headaches a year ago, with indigestion and general ill-health. About two months ago his mother noticed that he washed his hands more frequently than usual, and would stand a long time before the basin in an apparently abstracted state, that he would spit in the coal-scuttle repeatedly, and that he picked up pieces of straw and matches, which were always thrown into the coal-scuttle.

He explained his actions by saying that the pieces of straw resembled crosses, and he could not show disrespect by carelessly stepping upon them. His habit of spitting, he said, was due to the fear lest

[1] Arch. f. Psych. und Nervenheilk., Bd. xii, p. 17.
[2] Quoted by Emminghaus.

the saliva in his mouth should interfere with the full effect of the communion-wine, and this was carried still further by spitting in his handkerchief. Of late he occasionally has delusions that his food is poisoned, but he denies this to me. When he crosses the railroad tracks that run near his house he is impelled to pick up stones that lie between the rails; if he does not do so he is filled with fear lest there may be a railroad accident.

He has all the distress of mind common to other sufferers from this form of trouble, if he neglects to follow his first impulses, and often returns to obey the dominant conception.

He often remains for a long time in the water-closet, sometimes for ten or fifteen minutes, and when his mother enters to find the reason of his seclusion, she discovers that he has littered the place with many pieces of discarded water-closet paper, refraining from desecrating by use any piece that contains creases that may bear any resemblance to the common symbol of Christianity. He examines each piece carefully. He sleeps very badly and has nightmares, and grinds his teeth. His pockets when examined are often found to contain various nails and sharp things that he has placed there after picking them up lest they might injure someone.

When I talked with him I found little or no intellectual disturbance, and I think he appeared to consider that his objections to his food were not so much because he thought it was poisoned, as because it might in some way interfere with his religious professions and duties; but from his mother's account he undoubtedly at other times has well-marked hallucinations and delusions.

He expressed much distress in regard to his condition, and I think to some extent realized its hold over him. Upon interrogation I found that whenever he walked in the street he carefully put out of the way or picked up any object, especially pieces of straw, wood, or paper, that in any way in their arrangement bore the least resemblance to a cross, for fear that he might commit some act of sacrilege.

After much questioning it turned out that he had received a deep mental impression from a story in a semi-religious school "reader," which was in use at the Roman Catholic school which he attended, and upon examining the book I found a highly-colored romance which had evidently been prepared for the purpose of appealing to impressible children of his particular faith.

As to treatment, it may be said that in the mild or hysteric cases it is often possible to effect a cure through improvement of the general health, but there is always the likelihood of a return. In these cases, as well as in those that fall under the second division, moral therapeutics are in order, and are sometimes very successful. It is of the utmost importance that the patient should be taught to resist not only his fears but his promptings, and he should be made to do the very things that are distasteful to him, although such a course implies some mental and physical suffering. The insanity is always aggravated by yielding, and if the physician is firm and insists upon the performance of an alleged impossible act, the patient nearly always derives relief and some peace of mind from the subsequent consciousness that he has performed it. One of my patients declared she could not ride upon the elevated railroad or cross the ferry. When made to do so several times with her nurse, she frequently undertook excursions which, of course, were not attended by unpleasant consequences.

I have with difficulty hypnotized two or three subjects, and in one case in which the disorder was a light one, obtained results that were permanent by the suggestion of a state of self-reliance.

The matter of commitment frequently arises when the patient gives a history of impulsive concepts which are likely to lead to suicidal or homicidal acts. There is no rule to be laid down in regard to this, but in well-marked doubting insanity, in which *the dominant concept has lasted for some time*, I have been reluctant to send the person to an asylum, and so far have had no reason to regret my action. A step of this kind at best is a most difficult one when the ordinary intelligence and susceptibility are so well preserved. I can recall cases that have been under observation for fifteen or sixteen years, in which the patients have upon different occasions seriously referred to their promptings to use weapons for the destruction of themselves or others, but I have been able to keep the mental equilibrium at such a point that no harm has resulted.

Of course, in cases in which the existence of genuine paranoia is strongly suggested, no risk should be taken, and the patient should be promptly protected.

The mental discipline of these patients is an all-important measure, and if some formula can be devised to enable them to regulate their mental action, an occasionally striking improvement will be the result. My associate, Dr. George De Forest Smith, has had a case of sexual doubting insanity that was improved by a suggestion that the patient should keep certain hours and certain days for decision, and it was his habit, if he had a doubt, to number it, and dismiss further speculation by a kind of procrastination, saying to himself, "I will leave No. 39 to be decided on Thursday, between 12 and 1." This action of the man led him to habits of self-control in other directions, which at least have brought about much less mental torture than existed before.

44 East Twenty-ninth Street.

THREE CASES OF LUNG-ABSCESS—WITH COMMENTS UPON THE ETIOLOGY, DIAGNOSIS, AND TREATMENT OF THE CONDITION.

BY DELANCEY ROCHESTER, M.D.,
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CASE I.—Francesco Prescope, an Italian laborer, thirty-eight years of age; married; was admitted to the Buffalo General Hospital on March 31, 1893. It was impossible to obtain any history of the case. At the time of entrance the respiration was 40, the pulse 120, the temperature 102.5° F.; the tongue was coated and the appetite poor; the examination of the urine showed normality, except some diminution in amount. Physical examination revealed over the middle lobe of the right lung, behind, and in the axilla, increased fremitus, percussion-dulness, bronchial breathing, and crepitant râles; there was expectorated the sticky, rusty sputum of lobar pneumonia. The temperature continued high, with occasional marked falls for four days, when it reached 105°; the pulse ranged from 90 to 120 during this time, and the respirations from 40 to 50. From this time on, for two weeks, there was little change in the patient's condition, except as revealed by physical examination of the chest. The dulness spread downward over the lower lobe, the fremitus, râles, and finally the bronchial breathing disappeared, but the expectoration became more purulent, and finally lost entirely the characteristics of the pneumonic sputum. Finally, on April 18th (the nineteenth day after admission) the man expectorated a large amount of purulent material. Microscopic examination of the sputum (made upon several occasions) never showed the presence of tubercle-bacilli, but at this time it did show elastic fibers. Physical examination, on April 18th, showed on percussion a tympanitic resonance on the right side in the interscapular and infrascapular regions, from the lower border of the fifth rib to the eighth intercostal space. This was easily marked out by auscultatory percussion. Below this the flatness remained. Over the area mentioned auscultation revealed amphoric breathing, amphoric voice, whispering pectoriloquy, and occasionally metallic tinkling; below this area the auscultatory sounds were still absent. The diagnosis made was lobar pneumonia followed by abscess in the middle lobe of the right lung, and probably empyema.

The man was transferred to the surgical side of the hospital for operation. The operation recommended was the removal of pieces of four or five ribs, irrigation of the lung-abscess, and packing with iodoform or zinc-oxid gauze. The operation performed was the resection of a portion of the fifth rib and drainage. After this operation the patient improved for a while; but, in spite of frequent dressings and, also, finally, a counter-opening lower down in the chest and thorough drainage, the temperature continued its diurnal rise and fall, and the patient had all the appearance of one suffering from pyemic poisoning. At length, on July 14th, the operation was completed, and one and a half inches of the sixth, seventh, and eighth ribs were removed, in addition to the section of the fifth rib that had been removed at the first operation. The abscess was irrigated and packed with zinc-oxid gauze. For twelve days thereafter the temperature varied from 98° to 101°. The man was discharged from the hospital, entirely well, September 30th. I was not notified when he was to be discharged, and so was unable to note the condition of the lung, and there is no memorandum in the surgical records as to this.

CASE II.—Refrigealo Cristeizo, an Italian, thirty-four years of age; a laborer; single; entered the Buffalo General Hospital June 8, 1893. His temperature was 101°; pulse, 130; respirations, 38. I saw him the next day and found the same rate of respiration, temperature, and pulse, the last being small and weak. Physical examination showed the right side bulging and motionless, without fremitus. On percussion, absolute flatness was found all over the right chest, in front and behind; on auscultation there were no breathing-sounds or voice-sounds. The heart was displaced to the left; there was a systolic bruit at the apex, and a diastolic bruit over the aortic valve; the pulmonary second sound was markedly accentuated. The diagnosis was pyothorax of the right side, so extensive as to cause complete compression of the lung. The dyspnea was so marked—amounting to orthopnea, the respirations rising to 44 per minute—that I advised immediate aspiration of part of the fluid to relieve this condition. Eighteen hundred cubic centimeters of cloudy, greenish, puruloid fluid were withdrawn by the aspirator, and the patient was then transferred to the surgical ward. Two days later the man was operated on by Dr. Phelps. One and one-half inches of one rib (which rib not noted) were resected, and 3000 c.c. of pus were removed and the cavity drained. At the time of this operation it was found that there was direct communication between the lung and the pleural cavity, but the extent of destruction of lung-tissue was not investigated.

After the aspiration, June 9th, the patient's general condition improved, so that on the day of the operation the temperature had reached normal, the pulse had fallen to 80, and the respirations to 30. For two days longer the condition remained about the same, but on the third day the temperature rose to 103°, falling to normal, and rising the next day to 102°, again falling to normal, and then rising to 106°. It kept on in this manner for eight days, moving from a morning record of 99° to an evening record of from 102.5° to 104.5°, the respirations at the same time ranging from 30 to 45 per minute. The temperature then ran along for five days below 101°, but still showing the marked breaks of sepsis. On the morning of July 1 the temperature was 97°, and eight hours later 104.8°—a range of nearly 8° in eight hours. From this time the temperature kept up the diurnal range from 97° to 100°, or 101°, or 102°, with a leap every third, fifth, or seventh day to 103°, 104°, or 105°. The pulse kept ranging from 100 to 140, reaching 160 some eight hours before death. The

respirations ranged most of the time from 30 to 40, occasionally rising to 50, and five hours before death reaching 80. The patient died on July 17th, thirty-six days after operation. It was impossible to procure an autopsy.

Case III.—William Croll, an American, fifteen years of age; a clerk; was admitted to the Buffalo General Hospital on September 1, 1893. Appendicitis was diagnosticated, and the patient was transferred to the surgical ward with advice for operation, which was performed on October 11th, resulting in the evacuation of a large abscess, containing 200 c.c. of thick, creamy, ill-smelling pus. The abscess extended down into the pelvis. In addition to the pus there were removed from the cavity the appendix vermiformis and a mass of new fibrous tissue, half an inch thick and three inches long. In spite of this operation, and although the local condition improved daily, the patient's general condition showed evidence of pyemia. and the temperature-curve showed the characteristic rise and fall. On October 28th the patient began expectorating bloody pus, which did not contain tubercle-bacilli. On October 30th, at Dr. Parmenter's request, I examined the patient's chest. Inspection showed diminished respiratory movement on the left side; palpation, increased fremitus in the infraclavicular and upper part of the interscapular region, absence of fremitus in the lower part of the infrascapular region, a peculiar fremitus in the lower part of the interscapular and upper part of the infrascapular region. On percussion, skodaic resonance was obtained in the infraclavicular region, slight dulness in the mammary and upper axillary region, slight dulness in the suprascapular and upper part of the interscapular region, dulness in the lower part of the interscapular region, gradually increasing until flatness was attained in the lower three-fourths of the infrascapular region.. On auscultation, exaggerated breathing was found on the right side, diminished breathing of a broncho-vesicular type over the upper part of the left lung, in front and behind, accompaned by moist râles; in the lower part of the interscapular and upper part of the infrascapular region, near the spinal column, cavernous breathing was found of peculiarly amphoric quality, changing, as the stethoscope moved downward, to distant bronchial breathing, and then ceasing altogether; egophony was also heard at the junction of the interscapular and infrascapular regions; and below this the voice sounds were absent. The diagnosis was empyema, with probable lung-abscess.

The operation took place on November 1st. From one and a half to two inches of the sixth rib were removed at the posterior axillary line, and about 800 c.c. of bloody pus evacuated. An evident opening into the lung was present, though the situation and extent of loss of lung-tissue were not investigated. The cavity was drained. The condition of the patient after operation was as follows: The temperature varied from 99° to 101°; the pulse from 90 to 100; and the respirations from 25 to 30. Physical examination on November 7th showed the presence of pus in considerable amount, and poor expansion of the lung; the opening from the lung into the pleural cavity was still present. There was poor drainage from the opening in the chest. On November 23d, the temperature had not been above 99.5° for a week, and the pulse had ranged from 80 to 90, the respirations averaging about from 25 to 30; the patient's general condition was markedly improved, the appetite good, and the bowels regular. He has gained in flesh, though very anemic, and is up and walking about the ward. Physical examination of the chest shows a tendency to droop to the left, both shoulders falling forward, and the chest being quite flat, with considerable spreading out in the hypochondriac and lower axillary regions; there is relative fulness of the left supraclavicular and infraclavicular regions, respiration rapid and shallow. Upon forced respiration fair expansion of the supraclavicular and infraclavicular regions is found on both sides, and poor expansion in the left hypochondriac and axillary regions; posteriorly there is very slight movement of the left side, with marked expansion of the right side. Fremitus is good everywhere, except in the infrascapular, axillary, and hypochondriac regions of the left side, where there is none to be felt. There is hyperresonance in the left supraclavicular and infraclavicular and suprascapular regions, slight dulness in the left interscapular and hypochondriac regions, marked dulness amounting almost to flatness in the left infrascapular and lower axillary regions, and good resonance all over the right side. On auscultation the breathing sounds are found to be good over both apices, slightly diminished in the left axillary and hypochondriac regions; posteriorly there is exaggerated breathing upon the entire right side; on the left side diminished breathing in the suprascapular, scapular, and upper part of the interscapular regions; there is bronchial breathing in the lower part of the interscapular region, and absence of breathing in the infrascapular region. Vocal resonance is diminished all over the left side in front and behind, except in the infrascapular and lower axillary regions, where there is none.

As to the heart, the apex is in normal position, the action weak and hurried, the first sound relatively weak, the pulmonary second sound accentuated; the wound in the side is closed, but is not skinned over, there being present an exuberant growth of granulation-tissue.

Of these three cases, the first was proved to be one of pulmonary abscess, and is of special interest from an etiologic point of view, as it was a definite case of lobar pneumonia terminating in abscess and final recovery. Of this condition Fagge says: "The formation of an abscess in the lung-tissue as the result of true pneumonia is admitted by all writers to be very rare. So far as my own observations have gone I am quite disposed to agree with those who doubt whether it ever occurs."

Of abscess of the lung following lobar pneumonia, Flint says: "The collection of pus in an abscess leads to a sudden and copious purulent expectoration, if the life of the patient be sufficiently pro-

longed, and the existence of a cavity may be determinable by physical signs. This is a grave event, but it by no means necessarily renders the disease fatal. It occurred in four out of one hundred and thirty-three cases which I recorded and analyzed, and two of these four cases ended in recovery."

Osler says: "Abscess may result from purulent infiltration of lung-tissue. It occurred in four of my one hundred cases (autopsies). Usually the lung breaks in limited areas, and the abscesses are not large, but they may involve a considerable portion of a lobe."

As regards etiology Osler says: "Suppuration occurs in the lung under the following conditions: 1. As a sequence of inflammation, either lobar or lobular; after lobar pneumonia it is extremely rare; on the other hand abscess-formation is extremely frequent in the deglutition and aspiration forms of lobular pneumonia." (Possibly our second case may have had some such origin.) "2. Embolic, so-called metastatic abscesses, the result of infectious emboli, are extremely common in a large proportion of all cases of pyemia." (Our third case was undoubtedly one of this class.) "3. Perforation of lung from without, whether from external injury or perforation of abscess from below. 4. Tuberculosis."

The diagnosis of abscess of the lung is not difficult if one bear in mind the etiology, and follow closely the clinical developments of his cases.

In any case of lobar pneumonia which does not run a typical course, the possibility of termination in abscess should be borne in mind, and its development watched for. Septic fever, change in the character of the sputum to pus or bloody pus, rapid or sudden increase in amount of the sputum, and the physical signs of cavity, indicate lung-abscess. In the physical exploration of the chest I wish to lay especial stress upon auscultatory percussion as a most important procedure in the diagnosis of the existence and the extent of the abscess.

In all cases of empyema the possibility of the coexistence of lung-abscess should be borne in mind and the condition looked for. My third case illustrates this condition. Which was primary in this case it is absolutely impossible to say, but there is greater probability of an abscess breaking from the lung into the pleural cavity than from the pleural cavity into the lung, although the latter event does sometimes occur. In all cases of suppurative disease in any part of the body the supervention of respiratory difficulty should call for immediate examination of the thorax; even when there is no apparent respiratory disturbance in such a case, the continuance of the febrile symptoms after the evacuation of pus from the original seat of disease should call for a rigid examination of the entire body, including a careful physical examination of the chest to determine, if possible, the situation of any collection of pus. Having determined the existence of an abscess in the lung, the matter of treatment next confronts us. It is possible that certain cases may recover after evacuation of the abscess spontaneously through a bronchus (I believe the two recoveries mentioned by Flint occurred in that way), but by far the best practice is to open through the chest-wall into the pleural cavity, and thence into the lung, if the opening from the lung into the pleural cavity has not already occurred spontaneously. The opening into the chest-wall should be made sufficiently large to allow the extent of injury to the lung-tissue to be discovered, and to allow of thorough irrigation of the abscess-cavity and of the pleural cavity; then the abscess should be packed with zinc-oxid gauze or with iodoform-gauze and zinc-oxid gauze, the dressing to be changed as frequently as necessary. I think if the primary operation in the first case reported had been as thorough as it afterward had to be made, the second and third operations would not have been needed, and the case would have recovered much more quickly. I think that if the operation in the second case had been as thorough as indicated, the patient would probably have recovered, for he lived for a month after the imperfect operation. The result in the third case shows either that the opening from the lung into the pleural cavity was very small, or that occasionally a case of lung-abscess may recover after simple drainage. However, even in this case the present condition of the left chest, as shown by physical examination, is one in which the lower part of the pleural cavity has become so filled with granulation-tissue that the lung cannot expand there. It seems to me that there would have been greater probability of healing, with less granulation-tissue, if the original operation had been extensive enough to allow thorough drainage and antiseptic treatment of the interior of the abscess.

The *rationale* for a thorough operation in cases in which there is an opening present between the lung and the pleural cavity is this: By removal of the fluid from within and around the lung the capillaries of the lung are opened up and their absorptive power rendered most active; if now the external opening is not sufficiently large to allow thorough drainage to take place, and the parts are not rendered clean by irrigation, the absorption of septic material into the circulation must be extensive and the patient's condition rendered really worse than before operation; if, however, a sufficiently large opening is made and thorough drainage established, the abscess-cavity can be rendered as nearly aseptic as possible by packing with anti-

septic gauze, and thus the patient's chance for recovery is made immeasurably better.

These statements are thoroughly borne out by the course of the first case cited. The first operation was the removal of a part of one rib and the establishment of poor drainage; the septic condition continued and grew worse; the second operation was the making of a counter-opening lower down in the chest, with irrigation and the establishment of thorough drainage of the pleural cavity; the patient's condition was slightly improved for a time, but septic poisoning returned with great vigor; the third operation was the removal of pieces of four ribs, thorough irrigation, and aseptic packing of the lung-abscess, and the result was recovery.

The special point that I wish, particularly to emphasize is that in all cases of empyema in which an opening from the lung into the pleural cavity is present, enough of the chest-wall should be removed to enable the operator to investigate thoroughly the nature of the opening and learn the amount of destruction of lung-tissue. In this way if it prove to be an abscess, it may be treated as an abscess should be treated in whatever part of the body it may occur.

THE INCISION IN ABDOMINAL SECTION: HOW TO CLOSE IT, AND ITS POST-OPERATIVE COMPLICATIONS.

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The question that most vitally concerns us in our surgical and gynecologic work is: How can we reduce the mortality? The question is a momentous one, when it is considered that it is human life we deal with; that our surgical judgment and surgical fingers repeatedly determine the issue of life or death. Our progress, the victories gained, are gratifying but not satisfying. We go back only for the lessons of skilled experience, to get in more intimate touch with the teachings of those who blazed the way for us against the superstitions and prejudices of ignorance. It was not within the human limits of the honored pioneers of our profession to drive out all the darkness and let in all the light, nor will it be within ours.

While the ignorant mob may not be at our doors clamoring for blood in atonement for our real or imagined failures, there is a malign power still not broken, throned about educational centers, scattered everywhere, and to our humiliation finding mischievous allies in the ignorant, prejudiced, and unscrupulous of the profession. They are the men who embarrass advanced teaching, who place in the way of the progressive, conscientious, and practical teachers their chief obstruction and discouragement. The man who cannot or will not learn should practise at least the virtue of silence. Not a few of the afflicted suffer premature death, or live useless lives, live through years of avoidable suffering, through ignorant and pernicious intermeddling.

We refer to our surgical advances as marvellous. In a strictly modern sense they have been so, yet half a century elapses between McDowell, Bernham, and Mr. Tait. The Atlees, with their sound surgical judgment, their masterly surgical skill, and their high professional honor, come in early and make profitable history for the surgeon's reading. With our better perfected methods we are fortunate in the possession of the advantages of the lessons the wisdom and courage of these men evolved and mastered. A glance at our own field faintly conveys to us some realization of the embarrassments with which they contended. They did that which made it possible for us to be where we are: they made an intelligent beginning. We cherish the faith that they transmitted, to men of our own day and generation, some of the mettle which gave them their triumphs.

Let us begin where our surgery begins—with the incision. We have nothing from which we can even approximately determine to what extent the length of the incision influences the mortality. The statistics of comparative results would not prove satisfactory for the reason of the entry of so many other compromising elements—for example, adhesions, their character, extent, and locality. That the length of the incision exercises a greater influence than is generally recognized or admitted, I entertain little doubt.

As to length, no rule of mathematic certainty can be laid down. In my own experience I find the balance of both convenience and safety to lie with the short incision. Muscle undamaged and intact is the material and best protection to the abdomen, and there is less bleeding when it is uncut. A short incision narrows the limits of hemorrhage. However simple may be the structures composing the abdominal walls, a lengthy incision gives unnecessary extent to exposure of the peritoneal cavity and the abdominal viscera to atmospheric influence, and to needless contact with the hands of the operator—and this without lessening the difficulty in dealing with those varying emergencies constantly encountered by operators. It is safe to begin with a small incision, and when the size and character of the tumor or complications present require a longer one, it can easily be made. Very much of our abdominal work can be done through an opening admitting only two fingers. The reliance of the abdominal surgeon must be largely in educated fingers. Diseased tissues may be dealt

with through a small incision; exposure of adhesions to view is not necessary, except those of the small bowel. In a majority of cases an operation can be done through a small incision without the operator or spectators seeing the viscera. Universally adherent, irreducible, or solid tumors, require a long incision for delivery, and for dealing with complications that can only be dealt with through the long incision—those beneath and on the sides of tumors. In the majority of cases to so enlarge the opening as to obtain a view of the parts augments the risk of ventral hernia and provokes tedious convalescence.

The question as to the length of the incision continues a controverted one, and the opinions of those who by reason of their experience are entitled to speak with some weight of authority, have for us a practical interest, though we may not accept them for our guidance. Peaslee, in his excellent work on ovarian tumors, in referring to the controversy that arose in England between the advocates of the long incision and those of the short one, says: "It is sufficient for my purpose to state that by the short incision I mean one from three to six inches long, and by the long incision one of ten inches or more, and sometimes extending from the symphysis pubis to the ensiform cartilage, as practised by Dr. Charles Clay." Quoting Kœberle, he says: "In his first 69 cases the mortality was directly proportional to the length of the incision. He found that of 12 cases in which the incision was from two to four inches, only one died; of 48 cases, with a length of from four to ten inches, 15 (one-third) died, and if the incision was from ten to sixteen inches, 8 out of 22 died." But Kœberle, unlike Dr. Clay, adopted the long incision only when obliged to do so. In his first case of ovariotomy Dr. McDowell made an incision nine inches long. He said of his operations: "My incisions were always so free and extensive that I always performed every part by sight." Dr. Nathan Smith in his first ovariotomy (1821) made an incision three inches long and successfully removed an ovarian cyst through the incision. The early advocates of the short incision regarded all incisions as short that did not exceed six inches. Peaslee lays down the following practical rules:

"1. To make the opening into the peritoneal cavity for the removal of the tumor at least three inches long to begin with, and, of course, longer in case of large cysts which cannot be essentially diminished by tapping; and

"2. Then to prolong it, if necessary, and only so far as is actually required."

He illustrates as follows what is meant by long and short incisions, and, in his view, their relative dangers: "Making the distinction of (1) very short incision, two and a half inches and less—and such alone was really meant by the operatio minor; (2) short, three to six inches; (3) long, six to ten inches; and (4) very long, ten inches or more—operatio major." Their relative danger may be pressed as follows:

Very dangerous.	Less dangerous.	Comparatively safe.	Very safe.
Very short, two and a half inches or less.	Very long, over ten inches.	Long, six to ten inches.	Short, three to six inches.

The bad results of German ovariotomists, when they have been bad, cannot be logically or justly credited to the short incision; when they have failed, their failures are to be credited to other causes, chiefly to dirt. Their recent work has been good.

I repeat that my own experience does not accord with the experience of the advocates of the long incision. I cannot, therefore, accept the opinion that a short incision is dangerous. Through a small incision—except in cases of large, irreducible, or solid tumors, of course—there can easily be conducted all needed manipulation of parts, thorough explorations for adhesions and their safe detachment, and a careful cleansing and flushing of the peritoneal cavity.

When the one idea, that of safety, dominates all others, every precaution will be used to prevent accident in any form. The importance of a perfect closure of the incision has only recently received the attention that it deserves. The effort should be to approximate as nearly as possible normal conditions, anticipating and dealing with all existing or possible complications with scrupulous minuteness and care, thus guarding against those accidents that are too frequent. It is true that some of our bad results are beyond our explaining and beyond our avoidance, but there are many accidents for which we have no valid excuse. In the major number of our cases we can account for the accidents from which our patients suffer and with which we have to deal; we can trace the trouble very generally to the manner in which the operation was done—to bad, incomplete, or too much surgery.

For a long time the closure of the incision was a matter of rude surgery; transfixion-pins, with figure-of-eight strings thrown about them, constituted a common method. I do not pretend to suggest uniform procedures for all cases; each operator has his own way, and does his own work best in that way, and without special training it would not be possible for him to apply the methods of others safely and successfully. I am satisfied that the exposure and manipulation of the incision, as well as

the peritoneum, is harmful. Incisions bathed in pus and filth, and freely manipulated, often refuse to unite. The incision is an outward, a surface sign of our workmanship, and we should have some pride in its character; it should not be a sign of mutilation. An extensive incision, one indicating careless, slouchy, indifferent surgery, is something more than a discredit to the surgeon; it is a continuous annoyance to the patient.

Careful study and effort should be made to avoid the presence of cicatricial tissue. Strenuous endeavor should be made to secure primary union in all wounds. Suppurating wounds are largely due to careless closure or to tight sutures including too much tissue; tight suturing is too common, and in many feeble subjects has destroyed life. Suppuration due to tight suturing and stitch-hole abscesses in all sections prolong convalescence when they do not result fatally.

The now-fashionable buried suture is not free from danger; nor is this method carried out by any material giving the perfect result claimed for it. In two cases I have repeated operations on the same patient to remove the entire scar. These two patients came to me with scars studded all over with sinuses; in one I feared sarcoma of the scar, but, after removing the large diamond-shaped piece underlying the entire width and length of the scar, I found upon careful dissection numerous ligatures or buried sutures throughout its entire center. Through the many years of suture-experiment the application of the buried suture at any and all points of the body has been found a failure. The use of the silver ligature in ovariotomy has been followed by abscess and death. The buried suture in the female perineum is also followed by suppuration. Human tissues will not tolerate the presence of a non-absorbable foreign body. Undue chances and liberties should not be taken with the peritoneum because of its great tolerance.

That eminent old English surgeon and author, Richard Wiseman, as far back as the reign of Charles II, more than two centuries ago, wrote, under the caption of "Wounds of the Belly": "Authors have proposed several ways of stitching these wounds which I shall not trouble you with, but advise you to make your stitches deep, that the peritoneum may be united with the flesh; for if you fail therein a hernia must necessarily succeed." Through-and-through suturing, including all structures, more of the central structure than skin or peritoneum, with either silkworm-gut or pure silk, two of the strongest and cleanest of all materials known, have given and continue to give the most satisfactory results. Silkworm-gut seems to be the favorite material at present; it possesses all the natural and essential qualities of a suture, is small, strong, and non-irritating—the three cardinal virtues of all good suturing material. The method of terracing sutures has nothing to recommend it, while it prolongs the operation, which is an important consideration in all cases in the hands of young operators, who under the stress of the occasion are likely to forget the results of a careless and needlessly prolonged anesthesia. Retraction of skin and peritoneum by the introduction of silkworm sutures gives inclusion of more central structures and the least possible tension on skin and peritoneum.

To so introduce sutures as to secure the desired results requires practice with a fine, straight needle and the education of the fingers. By such methods it is exceptional to have cutting sutures or stitch-hole abscesses. In tying the sutures you will find muscle and aponeurotic structures in apposition before the skin approximates. Keith, Tait, and Bantock all use the fine, straight needle; their work has been about perfect. The use of large curved cutting needles is harmful, as they favor hemorrhage and, secondarily, stitch-hole abscesses. In anemic patients the Hagedorn needle favors hemorrhage; it has a cutting edge of quite one line in length. Too much emphasis cannot be placed upon the use of silkworm-gut sutures, introduced three or four to the inch, including all the structures of the abdominal wall. The use of uncertain material like catgut or tendon is a mistake, as, if one rely upon the manufacturer, he is never certain of its purity or quality. The surgeon should cleanse and prepare his own materials if he would do good work.

To minimize post-operative complications and the discomfort of the patient all operations should be done rapidly, through the smallest possible incision. Existing adhesions, omental and bowel, should be freed, the finest and purest of silk and the least quantity consistent with safety should be used; heavy, coarse material, silk or other, should not be used. Viscera should be placed in normal position and the incision closed after careful drying. Dry dressing with a snugly-fitting bandage is sufficient. I have given all methods of suturing the abdominal wall a faithful trial. I have also watched the methods and results of others, and again in re-operations in removing scars I have made careful studies, that I might determine the best. The deductions of my experience confirm me in the use of the methods and material I have suggested.

The operation of hysterectomy differs from ovariotomy in requiring a very much larger incision, because the tumor is solid. Mr. Keith says:

"I do not think that the length of the incision influences much, if it influences at all, the result in hysterectomy. The closing of the large wound prolongs the operation, but the after-comfort of the patient is in no

way affected by the length of the incision, if proper care be taken at the time to close the wound very accurately by a sufficient number of deep sutures. Of these I put in about four to the inch. Where the wall is thin, as it generally is, about the umbilicus a larger number may be required. I have put in a great number of sutures, and I think I put in twice as many as anyone else, and take in the whole deep tissues of the wall. I have seldom had to see a patient on account of any discomfort arising from the wound. There is no greater mistake than to include only the skin and peritoneum (this is Spencer Wells's method). It saves trouble at the time, perhaps, but in a month or two the patient suffers. It is said that the cicatrix comes to this in the end in all cases. It does not; with a properly united wound, with a sufficient number of deep sutures, taking in all the tissue, no hernia ought to happen."

Dr. John Homans, of Boston, in his little book reporting his work, says:

"The usual length of my incision is about two inches, except in fat people, or when some difficulty in the operation requires more room. I have always used silk sutures, and am careful to include all the abdominal parietes in the suture, particularly the tranversalis fascia."

To the following recommendation by the same author we most decidedly object: "During convalescence the patients have found the lifting-machine, figured in Hamilton's surgery as Dr. Jenks's fracture-bed, very useful, portable, light, and strong." I object to whatever involves the risk of strain upon the muscles. Strain is one of the chief causes of hernia. Machines strain, and when they are used no one need be "surprised to find that 30 women out of over 300, or nearly 10 per cent., have ventral hernia."

The old principle of rest, position, and pressure is as valuable in special as it is in general surgery. By rest I mean absolute lying on the back for days, limited only by the necessities of the case—the condition of the patient. For the first day it may seem irksome, but the patient, under kind and attentive nursing, soon rallies from this sense of irksomeness. Patients turned early, as a rule, do badly, and their incisions often give trouble.

DIPHTHERIA: PRIMARILY A LOCAL, SECONDARILY A CONSTITUTIONAL DISEASE.

BY W. CARROLL CHAPMAN, M.D.,
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PEPPER, 1893, says: "The majority of authors are still agreed in calling diphtheria a general or constitutional disease which develops a local lesion at some period of its course, though many are inclined to advance the opinion that in *exceptional* cases the local lesion may first appear."

Yeo, 1893, says: "It has been established that it (diphtheria) is primarily a local disease, a local infection, and that the constitution is secondarily affected by the absorption of toxic substances developed by the activities of a specific micro-organism at the seat of local infection."

Microscopy has been the principal means of real advancement in this subject, but there are more ways than one to arrive at a positive conclusion in the majority of cases. As an illustration we might allude to a case in which syphilis is suspected, the history obscure, the initial lesion not well marked, and the eruption so slight as not to have been noticed, and yet, later, symptoms manifest themselves of a serious character, which quickly yield to syphilitic treatment and to no other. In such a case we are justified in a diagnosis of syphilis.

By the same manner of reasoning we are sustained in the conclusion that diphtheria is primarily a local and secondarily a constitutional disease. In support of this claim I will briefly relate the following nine cases and the *treatment* or *not* of the *other* children in the families exposed.

FAMILY NO. 1; CASE I.—On November 22, 1892, I saw V. S., ten years of age, whose tonsils had been enlarged since infancy. I found the pharynx and tonsils inflamed and tumefied; the temperature 104°, the pulse 120, and the cervical glands enlarged. I pronounced the case one of tonsillitis, and ordered treatment accordingly. On the third day the symptoms were not being allayed and the child was in a stupor, with mouth-breathing. Inspection was made, and a diphtheric membrane was noticed on the tonsils and muscles of the pharynx. The membrane was well marked, as was also the peculiar musty and fetid odor of diphtheria. I immediately placed the patient on potassium chlorate, tr. ferri chloridi, and stimulants; I also used a spray of hydrogen dioxid and water, equal parts, in the throat and nose. The other rooms of the house were thoroughly fumigated with sulfur, and the two other children were separated from the patient. Communication between parents and children could not be prevented.

On the fourth day the temperature was 102°, the pulse 110, with complete obstruction in both nostrils, and in them membrane plainly visible. The foregoing treatment was continued for five weeks, except that as the case improved the H_2O_2 was diluted by four or five parts of water. The temperature ranged from 100.5° to 102° until convalescence became established.

CASE II.—Four days after the appearance of membrane (seventh day of disease) in Case I, a sister, aged eight years, was taken with an inflammation of the pharynx and tonsils. The temperature was 104°, the pulse 120. On the second day whitish patches made their appearance, which on the third day developed into the diphtheric membrane with all the symptoms of diphtheria—mouth-breathing, enlargement of cervical glands, fetid odor, and stupor—the membrane in this case also reaching into the entire nasal cavity. On the first appearance of the disease the same treatment was begun as in Case I—potassium, iron, whiskey, and antiseptic spray—and continued to convalescence.

Case III.—The youngest sister, aged six years, was taken with the same symptoms on the sixth day after the appearance of the membrane in Case I. The disease developed and was treated in the same way as in Cases I and II, to convalescence. Each child was treated, from the time of the commencement to dismissal, for about seven or eight weeks. All recovered, the symptoms never becoming graver than those of the first three days after the appearance of the membrane, except a sinking spell in the youngest about the fifteenth day. This was treated by increase in stimulants, the patient rallying in about eighteen hours.

Family No. 2; Case IV.—October 21, 1893, J. W., aged eleven years, had been sick for three or four days when I was called. Examination of the throat revealed diphtheric membrane. The temperature was 103°; the pulse 108; there were present cervical enlargement and all other symptoms of diphtheria. I fumigated the house with sulfur and excluded the other children from the patient's room. The same treatment was employed, except the whiskey, as in the three cases already narrated.

Case V.—Four days later the younger brother, aged four years, was taken ill with the disease. The same treatment was carried out.

Case VI.—Two days later, or six days after the first case in Family No. 2, the next oldest boy contracted the disease. In Cases IV and VI the membrane formed in the nose also; in Case V it did not. The baby, nine months old, escaped. The disease was light, lasting only thirteen, ten, and fourteen days respectively. The same treatment was used.

Family No. 3; Case VII.—A. S., four years of age, was taken ill October 25, 1893. The temperature was 104°, the pulse 126, the pharynx red; there was stupor, cervical enlargement, and vomiting. I gave a cathartic with bismuth and carbolic acid. On the third day white patches appeared in the pharynx, which developed into well marked diphtheric membrane on the fourth day, with all the symptoms of diphtheria. I fumigated the house, and separated the child from the other two children, and with a second atomizer had their throats and noses sprayed twice daily with the same antiseptic, diluted with five parts of water. They escaped the disease, although Case VII was well marked. The same treatment was used as in the other cases reported, extending over a period of twenty-one days, with recovery.

Family No. 4; Case VIII.—V. G., ten years of age, was taken ill on October 30, 1893. She had been sick four days when I was called in. The diphtheric membrane was well developed in the nose and throat, as were all the symptoms of the disease. The temperature was 103°, the pulse 120. Iron, potassium, stimulants and the antiseptic spray were ordered. On the second day, the fifth of the disease, the temperature was 98°, the pulse 100 and feeble. I increased the stimulants. There were nausea and vomiting. The temperature ranged from 97.5° to 100° until the thirteenth day, when the child became worse, the temperature 97.5°, the pulse 140 and feeble. I then gave digitalis. The membrane had now about cleared away; the child rallied for a few hours and died suddenly from heart-failure. The brother, two and one-half years old, was permitted to be in the same room all through the illness, but his throat was sprayed with a solution of H_2O_2, 1 to 5, daily, without symptoms of the disease arising.

Family No. 5; Case IX.—M. M., six years of age, on November 12, 1893, had been sick four days when I was called. I found diphtheric patches appearing, and the patient almost completely overcome by the intensity of the poison. I ordered stimulants, iron, potassium, and the spray. On the second day the membrane was well developed, but the symptoms were allayed, and continued so until the twelfth day of the disease, when the spray was left off and the patient became worse. The spray was recommenced, with alleviation of the symptoms, and was continued to convalescence.

Here we have nine well-marked cases of diphtheria, with one death—a mortality of about 11 per cent. Before using this treatment, with especial attention to the spray, I am ashamed to say the mortality of my cases was about 75 per cent., although I had used the potassium, iron, and stimulants, with other local applications mentioned, brushed or blown on the surface.

The result of the observations upon these cases points to the following conclusions:

1. Diphtheria is manifested locally first, the disease being often overlooked until the constitutional symptoms appear, these being caused by the absorption into the system of the toxic albumin given off by the Klebs-Loeffler bacillus.

2. The bacilli forming the toxic albumin are located in the larynx, pharynx, or nose, because the symptoms of poisoning by them are allayed when the proper germicide is thoroughly applied to these mucous membranes.

3. Even if the bacilli are situated beneath the surface, a solution of H_2O_2, and probably of other antiseptics, has the power of reaching them.

4. Constitutional symptoms appear to be prevented when the germicide is applied, at intervals of two hours, before absorption or secretion of the toxic albumin has taken place.

5. It seems clearly proved that the bacillus first attacks, at least in a large majority of cases, the membrane of the throat and nose exclusively, as those children exposed to the disease but whose noses and throats were treated with germicide daily during exposure, did not contract the disease, while those not so treated, except in one instance, did contract it.

6. Hydrogen dioxid, and probably mercuric chlorid, and some other germicides, in proper solution, have the power, when applied to the bacilli, to render them inactive and probably to destroy them, thus preventing secretion of the toxic albumin.

In support of this claim attention is called to Case IX. When the spray was left off on the twelfth day, at a time when the membrane had not entirely left the post-nasal space, there was a reappearance of the toxic symptoms. It might also be well to state that in Case VIII the atomizer broke ten or twelve hours before death and the spray was not introduced well. In several cases now under my observation, with the same treatment, the same results are being obtained.

The number of cases here detailed may be too small to definitely prove the conclusions drawn, but they strongly support the position taken, and further observations in this line will likely establish the fact.

A NEW METHOD OF TREATMENT OF CHRONIC NASO-PHARYNGEAL CATARRH.

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SEVERAL years ago, after relieving a number of patients of dacryo-cystitis by syringing the sac and nasal duct, the patients stated that they were also relieved of their chronic naso-pharyngeal catarrh. This fact suggested investigation, and patients without symptoms of disease of the tear-passage who had naso-pharyngeal catarrh were treated by syringing this passage. More than fifty patients have been thus treated with benefit during the last two years. The following two cases were typical and received no other treatment.

CASE I.—Mr. R., forty-one years of age, began treatment October 16, 1891. He had had chronic naso-pharyngeal catarrh for twenty years. There was considerable hypertrophy of the turbinated bodies. Nasal breathing was obstructed on the right side more than on the left. He had been treated by the galvano-cautery, by sprays, and by removal of pieces from the nose, with only partial and temporary relief. He was under the care of one physician for fifteen years. The sole treatment I employed consisted in syringing sweet oil down the nasal duct three times a week. At the end of four months the patient stated that his nose felt freer than ever before. He could breathe as well through the right side of the nose as through the left, and there was no discharge of mucus. The patient did not take cold as he formerly always did.

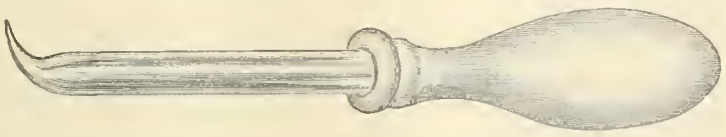
On October 15, 1893, more than a year after stopping treatment, the patient states that the relief has continued. He seems cured.

CASE II.—Mr. M., forty years of age, began treatment March 14, 1892. He had been a great sufferer from chronic naso-pharyngeal catarrh as long as he could remember. The mucus in his throat was profuse, thick, tenacious, and much worse in the morning. Efforts to clear his throat in the morning as a rule excited nausea and vomiting, so much so that he had never been able to eat any breakfast. He had hypertrophy of the turbinated bones, the right side being much worse than the left. For a number of years he had had hemorrhages from the right side of the nose, occurring at least twice a week, and lasting from two to eight hours. He was also a great sufferer from headaches, which were aggravated by frequent "colds" in the head. Ten years ago he was treated by cleansing and astringent sprays, and obtained some relief, which was only temporary.

Syringing the tear-passages with solutions of salt and water and nitrate of silver, gr. j to ℥j, gave some relief. Syringing the tear-passages with sweet oil gave greater relief, and treatment three times a week for three months was followed by apparent cure.

On October 1, 1893, more than twelve months after cessation of the treatment, the patient stated that he still felt relieved, and he has had no hemorrhages from the nose. Both sides of the nose seem clear. There is no mucus in the throat. He has not been troubled with nausea or vomiting. For the first time in his life he has enjoyed his breakfast every morning. The headaches have not returned, and he has had no colds in his head.

The syringe used is the ordinary glass eye-dropper with the tip drawn out to a fine point, and is made by Messrs. Kellogg & Co., of New York. The tip is bent at an angle of nearly 90°, and is about one-fourth of an inch long. The opening is so small that the rubber bulb fills with air in about half a second after removal of the pressure of the fingers.



To fill the syringe with water requires about five seconds, and to fill the syringe with oil may require several minutes. The tip is small enough to enter the smallest punctum, and tapers so abruptly that it closes the largest punctum, thus preventing a return flow of fluid. The syringe with its rubber bulb is about three inches long. A glass syringe is much lighter and cheaper than one of metal. Besides, with the glass syringe one can tell whether the injection is effective by observing the column of liquid. A syringe made with a glass barrel and metallic tip proved heavy and otherwise objectionable.

Care of the syringe is important. The point breaks very easily. A box should be prepared with a bed of soft cloth. The syringe should be placed in the box lengthwise and covered with a thick layer of cloth. Cotton gets into the opening of the

syringe and stops it up, but may be washed out with water. After using the syringe it should be returned to its case to prevent breakage.

Of the remedies used, olive-oil gave the most general satisfaction. Nitrate of silver was used in aqueous solution, from gr. v to gr. xx to ℥j. A saturated solution was used in several cases without injury. Menthol ʒj, olive-oil ℥j, proved beneficial in some of the cases. This combination required extra care to keep the fumes out of the eye. Weak solutions of iodin seemed to act well in some of the cases. They seemed, however, to irritate after being used a number of times. Salt and water were used with temporary benefit in some cases. Solutions of alum, copper, and zinc were used without much benefit. Solutions of mercuric chlorid were not beneficial, and diluted camphorated oil was used without much relief.

To make the injection the operator sits in front of the patient. Artificial light from an Argand burner is reflected by the forehead-mirror on the inner side of the eye, direct illumination being less satisfactory. The operator may also stand behind the patient, who is then directed to look upward and outward. A piece of cotton about one-fourth of an inch in diameter is placed over the semilunar fold and held with the forefinger of the left hand with slight pressure against the upper punctum; this prevents the fluid from entering the eye from the punctum of the upper lid. The thumb of the left hand everts the lower lid sufficiently to expose the punctum. The syringe, partly filled with the fluid to be injected, is lightly held by the bulb with the thumb and first two fingers of the right hand, the tip is inserted into the punctum and the syringe turned until the tip is at a right angle to the margin of the lid and parallel to the conjunctival surface of the lower lid. Slight pressure is made on the bulb, and the level of the fluid in the syringe is seen to descend as the injection is being made. When the injection is finished, and as the syringe is removed, press the cotton with the left forefinger against the lower punctum to absorb any overflow of the fluid. The injection can be made with the eye closed. Some cases do not require the upper punctum to be closed.

Among the difficulties noted are the fact that the punctum may be so small that the tip of the syringe does not enter readily. Dilatation with a pin remedies this. It is seldom necessary to enlarge the punctum with a knife. Sometimes the injection is difficult after the tip is introduced into the punctum, and manipulation of the syringe up, down, and in various directions will be required to free the point from the obstructing conjunctival fold. Nervous patients give trouble, and in such cocain helps, but does not always relieve, the difficulty.

More than five thousand injections of sweet oil were made without injury to the patients. Injections of other solutions at times seemed injurious. The glass syringe never broke or caused trouble during the injection.

The immediate effect of an injection of sweet oil down the nasal duct was to open the nasal passages. Many of the patients stated that the oil "opened the nose and head" more than anything previously used, and were concerned lest the air entering so freely the cavities of the head might be injurious. No case was so bad or had lasted so long a time but that the oil made the passages feel more free. The effect of the oil was to immediately lessen pain in the head, whether frontal, occipital, or temporal. In a case of spinal sclerosis with severe headache and shooting pains in the ears, the pain was completely relieved by syringing the tear-passages with sweet oil. The accumulation of mucus in cases of hypertrophic rhinitis is loosened at once, and can be removed by blowing the nose. In atrophic rhinitis no immediate benefit is noticed. The discharge is lessened in hypertrophic rhinitis, and may be entirely relieved. In atrophic rhinitis there is benefit, but the benefit is not so marked.

The beneficial results were not due to antisepsis. The oil did not act as an astringent; nor did it cleanse the nose. Its action must be explained through the nervous system. Ointments and oils relieve congestion of the skin and thickening of the skin; and oil in the nasal duct may by osmosis penetrate to the sinuses of the head, and, by its emollient or soothing effects on the nasal nerves, relieve congestion or hypertrophy of the mucous membrane.

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THE MANAGEMENT OF THE EPICYSTIC FISTULA IN PROSTATIC ENLARGEMENT.[1]

By JOHN D. S. DAVIS, M.D.,
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Epicystic surgical fistula is the title given to a suprapubic fistula into the bladder created by the surgeon for exploration, intra-vesical treatment, and drainage. Such a fistula, acting as an artificial urethra, is capable of giving free access to the interior of the bladder for cystoscopic exploration, to provide a ready, convenient, and comfortable means of emptying the bladder at will, and gives the surgeon a competent opening into the viscus for intra-vesical applications. It constitutes an essential element in the speedy and complete evacuation of the contents of the bladder in all epicystic operations, and imitates Nature in the restoration of its own

[1] Read before the Southern Surgical and Gynecological Association, November, 1893.

continuity as the pathologic changes within the bladder subside. Permanent after-drainage in all intra-vesical operations cannot be necessary, but it is highly essential to secure good and sufficient drainage until the paracystic tissue is disengorged, the cystitis relieved, the urine normal and passing by the urethra unobstructed. Until this end is attained complete artificial provision for the escape of the contents of the viscus must be made. In cases of prostatic hypertrophy or malignant growths, when removal of the obstruction is impossible or contra-indicated, the epicystic surgical fistula is clearly indicated and essentially necessary.

When Dr. McGuire suggested his coffee-spout fistula for the relief of enlarged prostate, the idea struck me as unique and desirable; but before I had succeeded in establishing my first fistula after his method I found that practically it was not a success. In the first case in which I tried to create this kind of a fistula I found that I could not keep it in order. Finally, an abscess formed and opened on the pubic side, which allowed the urine to escape in a direct line, and I could never completely close the abscess-fistula or make the urine return to the original coffee-spout fistula. And, after many attempts at closure of the abscess or direct fistula, I finally made a plug or stem for the fistula resulting from the abscess, and allowed the original fistula to close. My experience with several cases operated upon with the view of creating a fistula after the method of Dr. McGuire convinced me that it was exceedingly difficult to create a coffee-spout fistula. I therefore began operating with the view of creating a direct fistula into the bladder, which I have heretofore described, by three methods:

1. When the distention is great and no intra-vesical operation is necessary, the opening is made with a trocar, withdrawing the stylet and replacing it with a rubber catheter, after the introduction of which the canula is withdrawn, leaving the catheter in the bladder. It is better to have the canula in place about twenty-four hours before introducing the catheter alone.

2. When distended the bladder may be opened by a direct incision with the knife in the median line, with the cutting edge toward the symphysis pubis. The knife is withdrawn and a catheter is introduced through the wound in the bladder.

3. A perpendicular incision, one or two inches long, is made in the median line above the symphysis pubis; the recti muscles are separated to the symphysis, and if the pyramidalis muscles are in the way the fibers should be cut. The transversalis fascia is divided on a grooved director from the symphysis to the upper margin of the superficial wound. I catch the bladder with a tenaculum, on a line with the symphysis, through the prevesical fat, and with a bladder-knife I cut through into the bladder with one smooth clean incision, to prevent undue disturbance of the cellulo-adipose tissue between the bladder and the pubes and to avoid infiltration. Cutting this prevesical fat prevents it from dropping down afterward over the opening into the bladder and acting as a valve to prevent easy escape of urine, as also causing infiltration. Such a procedure also gives a smooth incision throughout, and it is almost impossible to have infiltration, even when no drainage-tube is left in the bladder, the urine being left to flow out through the fistulous tract and to be absorbed by a layer of cotton. In making the incision into the bladder little attention is to be given to any vein or veins that are sometimes met with. If cut they bleed but little. The operation is usually bloodless, so far as real hemorrhage is concerned.

The operation being completed and the patient out of bed, the annoying task follows. While suprapubic drainage is the best means that I know for treating those cases of prostatic enlargement, the fistula gives the patient a great deal of trouble. However well the fistula may drain, there will often be sufficient leakage to make the sufferer a pest to himself and to his friends. There is no possible way found as yet to keep the urine from occasionally leaking, and the fistula from occasionally inflaming. There is a constant tendency of the cutaneous orifice to contract and exfoliate that, if not carefully and properly treated, will cause a very unsightly wound and one that will be difficult to keep clean. As soon as the plug can be worn I have the patient wear it all the time—day and night. The plug I now use consists of a concavo-convex flange that coops over the mouth of the fistula and which, in some cases, aids in training the exfoliating tissues into a rudimentary penile projection that, when the patient urinates, will greatly aid in the prevention of dribbling. I show you a patient operated upon four years ago; he has no difficulty in keeping his abdomen dry, and is enabled to throw the urine several feet from his body. If he goes without the plug for a few hours his fistula so contracts that he can get the plug in again only with pain and difficulty. I had Tiemann & Co. make me a plug in two sizes of rubber, with a flat flange, which I use until the patient becomes accustomed to it. The concavo-convex flange sometimes so pinches the tissue when pressed down by the abdominal support that at first it cannot be worn. But after the cutaneous orifice has hardened for a while, the plug with the concavo-convex flange is better. The plug should be long enough to reach the bladder. But some few cases cannot tolerate the pressure of the plug in the viscus, and it should in these cases not quite reach the bladder-wall. I

have never seen two cases that could be treated exactly alike, and hence we have to be careful to adjust a plug to the comfort of each individual treated. When I first began to use the fistula-plug I had it made of silver and provided with a slight shoulder, one-fourth of an inch from the flange, to be grasped by the skin and held in position.

This shoulder, I thought, was a necessity in many cases to prevent the recti muscles from throwing the plug out. Experience has taught me that the shoulder is unnecessary and does not help matters. The best and most convenient way of keeping the plug in place is to wear an abdominal belt or support. The presence of the plug acts in preventing the artificial urethra from closing, and plays but little part in the power of retention and expulsion of the urine. There is a tendency of the entire track of the fistula to contract, but this is more pronounced at the cutaneous orifice. I do not think the recti muscles play much part in the retention of the urine, but there is formed at the vesical orifice a pseudo-sphincter that in many cases will so control the urine that the patient can retain it without dribbling for from four to six hours. I have never seen a case in whch the wash did not have to be kept up daily. So long as the fistula is a necessity, there will be sufficient pathologic causes to necessitate the daily washing of the bladder. So long as the urethra remains incompetent, from whatever cause, there will remain sufficient vesical irritation to necessitate the daily washing of the bladder. In these cases, when the fistula is created with the view of permanency, there must be an admission that the patient has an incurable malady—prostatic, urethral, ureteral, or renal. While suprapubic drainage promises much in the way of temporary relief, the fistula cannot be long tolerated without a longing desire on the part of the patient to get rid of it. With these facts before us, are we not confronted with the necessity for further surgical aid for the relief of the causes that necessitate the presence of the fistula?

To be plain, in conclusion, after we have relieved the patient by drainage sufficiently to build him up strong enough to endure any kind of surgical procedure, ought we not to remove the prostate rather than continue the fistula?

Reinfection with Syphilis.—At a recent meeting of the Royal Society of Physicians of Vienna, NEUMANN (*Wiener medizin. Presse*, 1893, No. 49, p. 1943) presented a case of reinfection with syphilis, which had been under observation in the primary attack four years previously. The case was utilized to demonstrate the curability of syphilis, and, as the treatment consisted of ten inunctions and four injections of calomel, as an argument against the protracted method of treatment.

CLINICAL MEMORANDUM.

REPORT OF TWO CASES OF AMPUTATION AT THE HIP-JOINT, IN WHICH HEMORRHAGE WAS CONTROLLED BY TRANSFIXION-PINS AND ELASTIC COMPRESSION.[1]

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THE renewed interest which has been manifested in the subject of amputation at the hip-joint, on account of new methods that have been recently introduced, leads me to think that the report of the following two cases may be of sufficient interest to engage the attention of the Society:

CASE 1. *Amputation at the hip-joint for recurrent sarcoma after previous amputation at the middle of the femur.*—H. B., twenty-two years of age, a German-American, entered the Cincinnati Hospital, June 28th. His father, one brother, and a sister had died of pulmonary tuberculosis, his mother, two brothers, and a sister being still alive. He has had a chancre and buboes, but no general manifestations of syphilis. He drinks beer freely. He has been employed on an ice-wagon, and has had to lift heavy masses of ice, resting them upon his knee. On admission there was a swelling, involving the entire circumference of the lower end of the femur, just above the condyles, with some distention of the joint. This swelling was elastic, without any marked points of softening, and was free from bruit or pulsation. Great pain was complained of. The history he gave was as follows:

Last winter he began to suffer with cramps in his left knee, and a swelling soon appeared on the outer side, with greatly increased pain. The swelling continued to grow, and involved the entire circumference of the leg. The pain became continuous and so severe that half-grain doses of morphin, given hypodermatically, were necessary to give him even temporary relief. His temperature on admission was 100°, his pulse 90. Soon after admission an exploratory incision was made over the outer aspect of the limb by Dr. Evans, then on duty in my absence, and the condition found seemed to indicate the presence of a ruptured aneurism. The incision was closed and healed promptly. On July 7th the cicatrix opened at one point, and some bleeding occurred. On the following day the man was anesthetized, and I made an incision into the tumor in the line of the recent cicatrix, after the circulation had been controlled by a rubber tourniquet at the upper part of the thigh. The knife at once entered a large cavity, from which, under strong pressure, over a pint of fluid blood escaped. An incision four or five inches long, was now made on the inner side of the leg, and for some inches the femur was found bare and roughened round four-fifths of its circumference. This condition extended down to the intercondyloid notch. At the lower part new soft bone had formed from the periosteum. No tissue resembling tumor-growth was found, and there were no layers of fibrin such as are usual in aneurism. The incision on the inner

[1] Read before the Northwestern Ohio Medical Society, Toledo, December 15, 1893.

side of the thigh enabled us to explore the main vessels, and they were found intact. From the condition here found I considered that we had to deal with a periostitis, but as the bone was so extensively affected, I judged that amputation was the wiser course; and this was performed without removing the tourniquet. An examination of the part removed left it uncertain whether the disease was an inflammatory affection or sarcomatous. A subsequent microscopic examination by Dr. Evans proved the correctness of his view, expressed at the time, of the sarcomatous character of the trouble. The wound healed promptly, and the man immediately began to gain in flesh, and in a few weeks left the house, free from pain, and some pounds heavier than when he entered.

On October 6th, just three months after the operation, the man again came into the hospital. For several weeks he had suffered pain in the stump, which had been also growing larger. The skin over the end of the stump was reddened and distended, as from an underlying growth; there was no fluctuation, and the cicatrix was perfect. Great pain was complained of.

On October 8th, the man was anesthetized, the stump laid widely open, when a condition similar to that found in the first operation was discovered. The swelling was composed principally of fluid blood; there was, however, unmistakable evidence of sarcomatous growth about the end of the bone, and amputation at the hip-joint was, therefore, determined upon. It is to the method adopted that I desire especially to call your attention, as it differs in some details from the proceeding of other operators; combining the operation of F. Jordan with elastic compression of vessels in both anterior and posterior segments of the limb by means of transfixion-skewers and elastic tubing applied as a figure-of-eight over each half. Thorough disinfection of the entire limb, groin, and buttocks had previously been carried out in anticipation of disarticulation being necessary. The knife was made to enter midway between the crest of the ilium and the top of the trochanter, and, by a slightly curved incision, was carried over the outer aspect of the latter, and then down on the outer side of the femur to the face of the stump. This incision exposed the capsule of the joint, and the knife was carried down to the bone along the entire course of the incision. One or two small vessels spouted, and were at once secured by forceps. A long steel pin, prepared for the purpose, was at once thrust through the upper part of the wound, just in front of the neck of the femur, and made to come out on the inner side above the lesser trochanter. An elastic tube was then wound in a figure-of-eight over the anterior aspect of the limb, so as to include the ends of the pin, and thus securely occlude all of the vessels in the segment. The head of the femur was then rapidly disarticulated by cutting through the capsule, and freeing the muscles attached to the great trochanter. A second pin was now passed, coming out near the first, and the posterior segment was constricted in a manner similar to the first. The soft parts, from the stump upward, were now quickly peeled off the bone, which was thus easily enucleated. Before amputating the remaining mass of muscles, a third pin was thrust through the tissues from before backward just below the first two in place. This third pin was unnecessary and useless, and somewhat in the way. A circular incision was now made through the skin, the femoral vessels isolated and secured, and the muscular mass cut through at a higher level. Absolutely no blood was lost. At points the muscles and intermuscular tissue presented a suspicious appearance, and these were carefully cut away with scissors. All visible vessels were secured and the pins then withdrawn. The loss of blood was practically none, and the operation was attended with little shock. The wound was closed throughout with the exception of a large-sized drainage-tube, which was carried into the acetabulum.

The progress of the case was satisfactory so far as the closure of the wound was concerned, but recently there have developed some symptoms that probably indicate recurrence of the trouble.

The method adopted in this case was suggested by the operation recently described by Senn, and is based on the same principle, namely, the control of hemorrhage by the independent constriction of the anterior and posterior segments of the limb above the point of amputation. Senn uses for this purpose simple pieces of tubing, without any skewer. After exposing the hip-joint by an incision similar to that of Langenbeck for excision, he disarticulates and then pushes a long pair of forceps through the tissue in front of the bone until it reaches the skin on the inner side of the thigh. The skin is incised and the forceps pushed through, and a strong piece of tubing, several feet long, is then grasped at its middle and drawn back and cut in two. The anterior segment of the limb is then constricted by tightly drawing the end of one piece across the face of the thigh, and tying or catching it by strong forceps. The posterior segment is then treated in a similar way. The entire circulation of the thigh is thus controlled by the two pieces of tubing. In a large muscular limb it would seem as though it might be difficult to secure sufficient compression of the vessels in this way, as the elasticity of a single thickness of the tubing is only available as a constricting force. The transfixion-pins, with the elastic tubing wound a number of times in a figure-of-eight over the limb must certainly secure firmer and more certain pressure, and the pins will be an additional security against slipping; and, moreover, they can be applied at a higher point, and by making the incision before the transfixion, they do not in any way interfere with the subsequent steps of the operation.

At the time of my operation I did not know that the plan I employed had been used before, but I find the account of an operation by Ogilvie Will,[1] in which the steps were identical, except that he had a single pin and applied constriction only to the anterior segment, as his flaps were cut somewhat differently. "The mode of operation I adopted," he says, "was that of F. Jordan, the skewer being passed from without inward between the bone and the soft parts in front of it through the upper end of the vertical incision, with which Mr. F. Jordan's operation commences." "The use of the skewer in hip-joint amputation originated with Spence, of Edinburgh." "The combination of Jordan's procedure with Professor Spence's skewers," he continues, "is most admirable, and really leaves nothing to be desired, for it is simple, easy, bloodless, and well adapted for drainage, while the presence of an un-

[1] British Medical Journal, November 16, 1889.

broken skin on the inner side of the thigh is a matter of no inconsiderable moment."

In Wyeth's method the closure of the vessels is secured by winding an elastic tube around the entire circumference of the limb, security against slipping being secured by two pins that pass the one within and the other without the bone. The encircling tube would seem to offer an embarrassment to disarticulation, if it did not prevent it entirely before removal. If I can judge from Wyeth's recent description of his operation, he effects disarticulation before removal of the tube, though he says it may be removed if necessary. In the *British Medical Journal*, January 4, 1890, R. J. Garden describes an amputation at the hip-joint in which he transfixed the limb from before backward, the skewer passing between the bone and the femoral vessels, the constriction of these vessels being secured by a rubber tubing carried over the skewer and the inner segment of the limb. A long inner flap was then formed by transfixion, cutting from within outward. There is no reason why this same plan could not be carried out after exposing the hip-joint by the anterior incision for excision, and subsequent introduction of the skewer after the capsule had been exposed and the joint examined. Indeed, this plan might possess great advantages in cases of tuberculous disease, when thorough examination of the joint was desirable before deciding on the necessity for amputation, or in cases of sarcomatous disease situated upon the outer and upper part of the femur. The preliminary exposure of the joint and upper part of the femur in the manner described facilitates the introduction of the skewer, which is then entirely out of the way of the manipulations necessary for disarticulation. One caution in using the skewer is necessary, namely, to see that it is strong enough not to bend under the traction of the elastic tubing.

I have recently performed a second amputation at the hip-joint by essentially the same method as that already described.

CASE II. The patient was a mulatto, twenty-two years of age, who some ten years ago had suffered an amputation at the middle of the leg for tuberculous disease of the ankle. Some months ago a new tuberculous process developed above and within the anterior superior spinous process of the ilium, which led within the pelvis. This had been several times scraped out. On November 27th his temperature rose to 102.5°, and continued high for some days, when an abscess burst on the inner side of the thigh and discharged a large quantity of tuberculous pus. No improvement followed this discharge, but the fever and septic symptoms continued. On December 6, he was anesthetized and carefully examined, full consent having been obtained for the performance of any operation deemed expedient. Close to the perineum on the inner aspect of the left thigh a large opening was found, where the abscess had spontaneously burst. The finger, introduced, passed up into the pelvis on the inner aspect of the tuberosity of the ischium, the depth of the cavity being so great that it could not be fully explored. The anterior opening, near the anterior spine, was traced downward, and bare rough bone found on the inner aspect of the ilium. A sinus from this opening passed down to the immediate vicinity of the anterior part of the neck of the femur, but no connection with the joint could be found. The joint was exposed by the usual vertical incision on the outer aspect, reaching down well below the trochanter. This incision opened a large abscess outside of the joint, which did not seem directly involved. A rapid consultation determined that the removal of the limb gave the only possible chance in the presence of such extensive disease. A single pin was at hand, and this was passed anterior to the bone and brought out on the inner side of the thigh. The only tubing available was so light that the flat rubber Esmarch tourniquet was used for the purpose of the figure-of-eight constriction, and the traction was so strong that the pin bent considerably. On this account, as an extra precaution, an Esmarch bandage was wrapped a number of times around the limb below, and a circular incision was then made through all the soft parts, down to the bone. This was left intact in order to gain the advantage of leverage in the manipulation necessary for the disarticulation. The femoral vessels were now secured in the wound, and the Esmarch bandage removed. This latter bandage I am satisfied was superfluous, and I am confident that the light tubing would alone have given perfect occlusion of the vessels. The soft parts were readily separated from the femur from below upward, and disarticulation readily affected. A number of tuberculous foci were scraped or dissected out, the various sinuses packed with iodoform-gauze, and the wound closed. After several days the temperature fell to normal and the man showed marked improvement in every way. The results so far have been entirely satisfactory.

I have long been satisfied that amputation at the hip-joint should play a more frequent rôle in the operative treatment of tuberculous disease of the hip-joint than it does.

In this case the joint-cavity itself was not involved, but there was a carious condition of the neck of the femur that might soon have reached the cavity itself, and repair in the man's condition would have been impossible.

To enumerate the steps in the operation here described, we have:

1. The capsule of the joint is exposed by an incision on the outer aspect of the limb, similar to the one used for an excision.

2. A skewer is then passed through the upper part of this incision, in front of the bone, and made to present on the inner aspect of the limb. A piece of elastic tubing is now wound in a figure-of-eight manner over the surface of the limb and ends of the pin, securely compressing all the vessels in the anterior segment of the limb.

3. The head of the femur is now disarticulated by incising the capsule and cutting through the muscles inserted into the great trochanter.

4. A second skewer is passed through the limb, coming out at a point on the inner side near the first, and constriction of the posterior segment secured in the same manner as that of the anterior segment.

5. A circular incision of the skin is now made at the point selected, the muscles are cut through at as high a level as possible, and the vessels secured.

6. The femur is enucleated and the skewers removed

7. Closure of the wound is then effected, with such drainage as the case requires.

If for any reason it is desired to secure a long anterior flap, or if for any reason it is deemed advisable to approach the joint from the front, the incision may commence "below and within the anterior spine and run down between the tensor vaginæ and glutei externally and the sartorius internally, and expose the joint," as advocated by Marsh, and the skewer can then be inserted from before backward, between the femoral vessels and the bone, in the manner described by Miles.[1] The inner segment of the limb is then constricted by elastic tubing applied in a figure-of-eight manner. Amputation may be accomplished by transfixion or by cutting the flap from without inward, or by the circular method, if desired. Such a plan might at times be more desirable than the method by the incision on the outer side.

MEDICAL PROGRESS.

Some Neuroses Associated with the Menopause.—At a recent meeting of the Medical Society of London, SAVAGE (*Brit. Med. Journal*, No. 1714, p. 995) pointed out that many mental disorders occur at the menopause that cannot be traced to this as a simple cause, though in many cases it is a predisposing cause. No special form of insanity can be called climacteric, but as a rule there is a tendency to mental depression, rather than to excitement. Any of the symptoms of the menopause may be so exaggerated as to assume serious mental aspects. For instance, there may be a kind of climacteric hypochondriasis, manifested by complaints referred to the circulation, to the head, to the skin, or to the viscera. The unnatural feelings in the skin or about the body may lead to false accusations, and the development of hair on the face may lead to miserable feelings of being unnatural or unwomanly. Deafness sometimes arises at the time of the menopause and may lead to various delusions, particularly of a suspicious nature. There is a special form of insanity which is most frequent at the climacteric period, in which, with progressive deafness, there is a progressive development of delusions of suspicion, a form that is difficult of cure and which may be parallel to general paralysis of the insane, though affecting the sensory side and not so fatal as the disease affecting the more organic side of life. There is a great tendency to the development of disorders of the reproductive organs and of the feelings associated with their function. Thus, there is frequently jealousy, irritability, and general domestic incompatibility. There is also frequently hysterical disorder of one form or another; in single women there are false ideas as to marriage proposals and the like, and in married women a re-development of sexual desire that may lead to various forms of sexual excess. There is a great tendency to seek stimulants, morphin and similar drugs. The prognosis is fairly good in many cases, though in a large proportion, especially among those that have had other attacks of insanity, recovery does not ensue. Rarely the climacteric period is attended with a relief from existing mental or nervous affections. General rather than special measures are indicated and the promiscuous use of the bromids is to be deprecated.

[1] British Medical Journal, November, 1889.

Symptoms of Syringomyelia from Syphilitic Tumors of the Spinal Cord.—At a recent meeting of the Clinical Society of London, BEEVOR (*Lancet*, No. 3664, p. 1252) reported the case of a married gardener, fifty-two years old, who two days after exposure to wet dragged the left leg. In the course of a few hours weakness appeared in the left arm, followed by wasting and numbness in the right knee. After the lapse of a week pain was complained of in the left shoulder, elbow, and wrist, with numbness in the left thumb and radial border of the forearm. In a short time weakness was observed in the left lower extremity and the numbness had extended to the groin and then to the level of the nipple. There was no affection of the sphincters, and no history of gonorrhea or syphilis could be elicited. On examination it was found that there was wasting of both upper extremities, especially of the left, with marked wasting and loss of power in the serratus magnus, supinator longus, muscles of the forearm, and intrinsic muscles of the left hand, as well as weakness of the left lower extremity; so that only the leg could be raised from the bed. Sensation was lost to pain, heat, and cold upon the whole of the right leg and the right half of the trunk up to the level of the fourth rib, while tactile perception was normal. The knee-jerk was excessive on the left side, and here ankle-clonus was present. Subsequently the loss of painful sensation extended up to the ulnar border of the right arm and to the radial border of the left forearm. There was loss of electric reaction in the intrinsic muscles of the hand. Later, paralysis of the sixth nerve of the right side appeared; the patient became gradually worse, and finally died. The case was believed to be one of syringomyelia. Potassic iodid was administered in small doses, without doing apparent good, but was not pushed, the treatment being tonic rather than anti-syphilitic. On post-mortem examination two syphilitic tumors were found on either side of the brachial enlargement of the cord, the left one passing nearer the cord than the right, but the condition of the cord precluded an accurate examination.

Fatal Intoxication with Benzene.—KELYNACK (*Medical Chronicle*, 1893, vol. xix, No. 2, p. 113) has reported the case of a woman, twenty-six years old, who, while under the influence of alcohol, swallowed about an ounce of benzene. Consciousness was lost; the pulse became quick and feeble; the respirations rapid and fairly deep; the pupils were contracted and irresponsive to light; the extremities cold, and the lips, ears, and nose distinctly blue. An intense odor of benzene emanated from the patient. The stomach was well washed out with warm water, the washings at first smelling strongly of benzene, and ether and strychnin were injected subcutaneously. In the course of three-quarters of an hour of such treatment the woman became sufficiently conscious to ask for some water. She then complained of great pain in the abdomen, and appeared also to be suffering from nausea and severe frontal headache. A little later diarrhea set in, and in spite of all stimulating treatment the pulse became progressively weaker and death took place from heart-failure twelve hours after

the ingestion of the poison. On post-mortem examination there was general congestion, and all of the organs and tissues emitted an odor not unlike that of anilin. The bronchi in several places presented small, irregular hemorrhages. The heart contained fluid and semi-fluid blood of a dark reddish-brown color. The stomach was small and contracted and contained only a little brownish fluid. At various parts of the jejunum the ridges of the valvulæ conniventes presented hemorrhages. At about the middle of the ileum there was an irregular area about nine inches long, where the mucous membrane was of a dirty-gray appearance and surrounded by hemorrhagic edges. The urine in the bladder contained albumin, cellular elements, and hyaline tube-casts.

THERAPEUTIC NOTES.

The Therapeutic Uses of Organic Extracts.—ALTHAUS (*Lancet*, No. 3666, p. 1376) has reported some exceedingly interesting observations upon the therapeutic employment of glycerin extracts of the brain and spinal cord of healthy young animals, which he designates cerebrin alpha and myelin alpha respectively. Five minims were found to be a good initial dose for hypodermatic injection, preferably into the muscles, and given on alternate days or oftener. No essential difference was observed between the action of the two extracts. The length of treatment was variable. The results were, as a rule, encouraging. The physiologic effects in healthy persons consisted chiefly of feelings of increased nervous energy and buoyancy and greater capacity for physical and intellectual exertion without much subsequent fatigue. No appreciable change in temperature, pulse, respiration, and coarse muscular force was observed, although the appetite seemed increased and the action of the bowels more free. In some cases the amount of urea excreted was increased. The principal diseases in the treatment of which the extracts were employed were the chronic degenerations of the spinal cord, various forms of hemiplegia, paralysis agitans, and epilepsy. They were also used in a case of astasia-abasia, in one of grave hysteria, for the disabilities attending old age, and during convalescence from acute diseases. The general result arrived at was that neither extract is a specific for disease of the nervous system. In cases of epilepsy, paralysis agitans, and tremor, as well as in the usual forms of hemiplegia, they were found quite useless. On the other hand, the conviction is expressed that they constitute a nervine tonic of considerable efficacy in certain maladies and conditions mainly characterized by loss of nerve-power, and particularly as an adjuvant to other remedies. In conditions habitually looked upon as purely functional it is believed that good results may be obtained from the injections without any other active treatment, while in maladies in which the organic structure of tissues is damaged they seemed to act chiefly as adjuvants and intensifiers of other treatment. Of fourteen cases of neurasthenia six were successfully treated with injections alone; six others improved under combined treatment; and in two aggravated cases there was no change for the better. Of fourteen cases of posterior spinal sclerosis the condition was improved in ten. Of four cases of spastic paralysis three greatly improved. In three cases of progressive muscular dystrophy in adults decided benefit ensued. In a few cases the treatment disagreed, constitutionally or locally. It is admitted that at the date of reporting sufficient time had not elapsed to permit an affirmation as to the permanency of the results obtained. The conclusion is expressed that the action of the extracts is twofold. In the first place they may be looked upon as a highly specialized pabulum of nervous matter by reason of the presence of protagon, cerebrin, and lecithin, as determined by chemic analysis; and in the second place they appear to act as antitoxins, as the phosphorized bodies split up under the influence of the alkalinity of the blood into glycero-phosphoric acid and cholin, which have the power of stimulating intra-cellular oxidation and the elimination of leukomaïns.

The Elimination through the Saliva of Morphin Subcutaneously Injected.—As the result of a special investigation, ROSENTHAL (*Berliner klinische Wochenschrift*, 1893, No. 49, p. 1189) has determined that when morphin is injected subcutaneously it is eliminated through the saliva in not inconsiderable quantities, even when the dose administered has been small and not in excess of minimum therapeutic amounts. Its presence is the more readily detected when the small doses have been given for several days consecutively. The period during which morphin is eliminated through the saliva cannot be determined by means of the methods heretofore in vogue of administering therapeutic doses to human beings; the relation of the quantity injected to the quantity eliminated can be only approximately determined. Morphin has a tendency to accumulate in the system, and is only gradually eliminated. A positive reaction of the gastric contents to tests for morphin and the qualitative determination do not afford conclusive and direct evidence of the presence and the amount of the alkaloid eliminated by the stomach, if the discharge of saliva into this viscus has not been excluded. In case of suspected poisoning with morphin examination of thes aliva would be indicated.

Iodo-caffein, *Iodo-thein*, *Iodo-theobromin* represent combinations of caffein, thein, and theobromin respectively, with sodium iodid. Iodo-caffein is prepared by dissolving 35 parts of sodium iodid and 65 parts of caffein in water in the cold, treating the solution with hydrogen arsenid and evaporating to dryness. There result colorless crystals, soluble in water at a temperature of 95° in the proportion of 14.5 per cent. Iodo-thein is a white powder, soluble in the proportion of 18 per cent. The preparation of iodo-theobromin is attended with more difficulty, the addition of a concentrated solution of sodium salicylate to the mixture of sodium iodid and theobromin being required. All three are unstable chemically and undergo decomposition in hot water. All stimulate the action of the heart. Iodo-theobromin increases more than iodo-caffein the energy of the systole, arterial pressure and diuresis. Neither influences the respiration or the temperature, and both are well borne. They are rapidly eliminated by the urine. The dose for adults is from 5 to 20 grains, in wafer.—RUMMO, *Sem. Méd.*, October, 1893; *Deutsche med. Wochenschr.*, No. 50.

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THE NOMENCLATURE OF CHEMIC TERMS.

THE extension of nomenclature in chemistry has been almost entirely in the organic department. In the inorganic field the terms are much the same as they were when their author's head rolled into the basket during the Reign of Terror. The useless "of," introduced originally through a too literal translation of French phrases, has been almost entirely eliminated, and the more satisfactory theories as to the structure of salts have brought about the substitution of such expressions as calcium carbonate and sodium nitrate for the older carbonate of lime and nitrate of soda.

In organic chemistry the resources of terminology have been highly taxed to secure a comprehensive nomenclature. In rapid succession, avenues have been opened up leading to luxuriant fields of discovery, and in many cases compounds have been obtained to which no systematic name can yet be given, and for which an arbitrary or fanciful title must, for the time being, suffice. Organic compounds being in great part composed of the same elements, no system based merely on indicating these elements can be applied. This simple method is practicable in the mineral chemistry. In the nomenclature of organic bodies the aim is to indicate structure and structural relationships; names based on any other system are temporary or accidental. Marked advance was made in April, 1892, by an international convention which met at Geneva to revise the nomenclature of chemic terms. It is regrettable that the new Pharmacopeia did not observe the salient points of the decisions of this convention, for there is little doubt that long before the next revision is made chemists and pharmacists will have accepted the system. This nomenclature is, of course, distinct from the question of reformed spelling, although the committee of revision appears not only to have confused the two issues somewhat, but also to be inconsistent with itself. Thus, in the preface, the committee states that it was considered inadvisable to drop the final "e" in "chloride," "bromide," etc., yet in the body of the work the "e" is dropped in "acetanilid," which is as much an innovation in spelling as "iodid." The terms "glycerol and benzene" are referred to as if they were novel or unusual, whereas they are in extended use in both America and England, and no chemist who is careful as to his phraseology now uses benzol as the name for the benzene. In fact, benzol is now a name, in the coal-tar trade, for a product containing several ingredients. It is also a matter of regret that the absurd spelling "naphtalin" is used for "naphthalene;" nor is it clear why a recent reform in German spelling has been allowed sufficient influence to make "naphtol" out of "naphthol." The disadvantage of the termination "ine," which the committee thinks useful as indicating basic properties, is shown in the case of caffein, the title of which to the final "e," which the Pharmacopeia gives it, is doubtful. A further eccentricity in nomenclature is shown in the rule of forming the Latin names of the salts with a genitive construction, while the English equivalent is put in the nominative. Thus, *potassii chloras* is the equivalent of potassium chlorate. The retention of the term hydrate, when almost all chemists have adopted the term hydroxid, which is so much more in accordance with our modern notions of structure, is also unfortunate.

The United States Pharmacopeia is not a textbook of chemistry; it is not even addressed to the teachers and workers in chemistry outside of medicine, nor has it any authority with them. In its chemic terms, therefore, it should defer to, not resist, the tendency of pure chemistry. The nomenclature which has received the approval of the American Association for the Advancement of Science, of the Association of Official Agricultural

Chemists, of the American Chemical Society, of the Chemical Society of England, and of such journals as the *Chemical News*, should not be dismissed as awaiting acceptance. As the committee adopts without hesitation the rules for botanic nomenclature promulgated by the Botanical Club of the American Association for the Advancement of Science, why should not the Chemical Section of the same Association be given equal weight?

A judicious approval of the generally accepted points of nomenclature in chemistry would have done much toward securing the adoption of the exact phraseology by physicians, who stand sorely in need of correction in this respect.

The following summary includes the more important points in the nomenclature of organic chemistry as now generally accepted:

–ol indicates alcoholic structure, *i. e.*, presence of the group HO (hydroxyl), *e. g.*, alcohol, glycerol, phenol.

–ose indicates a carbohydrate, *e. g.*, glucose, although it is also occasionally applied to the results of digestion of proteids, *e. g.*, albumose.

–ase indicates an enzym, or non-organized ferment, *e. g.*, diastase. This termination is at present restricted generally to enzyms of vegetable origin, but it should also be used with animal enzyms—which, however, usually end in "in." It would thus be better to say *pepsase* and *trypsase*, rather than *pepsin* and *trypsin*.

–ane indicates a saturated hydrocarbon.

–yl, *–ene*, *–enyl*, and *–ine*, indicate hydrocarbons.

According to the American system of orthography the only case in which "*ine*" is used, is as a termination for certain hydrocarbons. The preceding vowel is long.

–al indicates aldehydic structure.

–in is of no precise significance, and is mostly applied to bodies the structure of which is not yet known.

–id is similar to "in."

As to prefixes:

Ket– indicates the molecule CO in certain structural relations.

Azo–, *diazo–*, and *hydrazo–* indicate compounds in which nitrogen atoms are linked in various ways.

Nitro– indicates the group NO_2.

Am– indicates the group NH_2.

Im– indicates the group NH.

Thio– indicates sulfur, especially replacing oxygen.

The word *sulfonic* indicates the group HSO_3.

Except as noted, the termination *–ine* is not now used by American chemists. English writers, however, use it to signify basic properties, regarding *–in* as the proper term for non-basic bodies. They thus distinguish between salicin, which forms no salts with acid, and morphin, which does. It must be noted, however, that such methods are not in accordance with the tendency of nomenclature which seeks to express structure, not properties. The organic bases or alkaloids are not all of the same type, and when their structure is elucidated systematic names will be found for them. Until then there is no particular gain in indicating them as a group.

THE PHYSICIAN AS A SOCIOLOGIC FACTOR.

WE hold that it is directly within the physician's sphere of action to interest himself in all such movements as tend to prevent disease and improve the health of the community in general. Whilst it is undoubtedly the principal function of the physician to cure particular cases of disease, a large conception of his duty makes it plain that he should also act as a preventer of diseases in general. Such, indeed, is the tradition of the profession.

We are aware of the fact that the "city doctor" who has attained to any degree of eminence is usually a very busy man. With the ordinary duties pertaining to his private practice he combines those of teacher, author, investigator, and hospital official, to say nothing of what is demanded of him by the various scientific bodies which are honored by his fellowship. It would be extremely inconsiderate to ask such a one to devote any considerable portion of his time to the interests of the community or to the public in general. As a scientific investigator he may discover truths of the greatest importance to the whole world, and hence one may become a public benefactor who has never been seen or heard outside of his laboratory.

There are, however, many young members of the profession who, unfortunately for themselves, are not in possession of a lucrative practice, who are not particularly trained or expert in scientific research, and whose experience is yet too limited to permit them to become authors or teachers. They are, indeed, practically wasting much valuable time and ability. These "patient-waiters" if we so dare to term them, are found in the country towns, as well

as in the city, and we believe they can be of immense service to any community and likewise benefit the science of medicine and themselves by taking a more active part in those social questions of the day that have relation to preventive medicine.

It has been said that "No other profession is doing so much toward ending its own existence as the profession of medicine." This is true, even if we consider ourselves merely as therapeutists, or curers; but it is especially true of every effort in the line of prevention of disease, because that must limit the scope of our action as to its treatment. But if, as healers of disease, we are making ourselves less necessary with each new discovery, can we not make ourselves more useful as custodians and preservers of health.

For example: We all know how clearly preventable is that host of diseases arising from want of cleanliness. There is a dangerous ignorance on this subject among the people generally. Cannot the young physician do something to educate the masses in the matter of hygiene? It is not wise to overcome ignorance by force or expect a faithful adherence to sanitary principles if the necessity for such laws is not understood by the people themselves or by those who administer the laws.

Movements that relate to the better housing of the poor, to prevent overcrowding, that seek to establish breathing-spaces in the crowded parts of cities; efforts to secure better streets, pure water, less noise, less imperfect drainage and better disposal of garbage—all these are truly health-questions, and deserve the active coöperation of the young physicians, and the older ones too, for that matter.

The reform of municipal government is not entirely foreign to medicine, as without good government sanitary measures are not likely to be properly executed, and, therefore, both as a citizen and as a physician every member of our profession ought to be interested in municipal reform, and the younger members especially should do their part in its advocacy. Crime, pauperism and inebriety are called social diseases, yet they are closely dependent for their causation on physical disease, and on the other hand many physical diseases owe their existence to these social evils. Some go so far as to call all crime and inebriety disease, physical disease; others consider them the outcome of social conditions. It is the old question of inheritance, predisposition, and contagion, so often discussed in medical literature, carried into the morals of the world. Whatever the answer may be, the dependent and delinquent classes are more and more, in one way or another, coming under the care of medical men; they are being looked upon as abnormal and pathologic, rather than immoral and depraved.

All studies, therefore, of the causes of social diseases are not without the domain of medicine; and a knowledge of the social conditions of the masses, gained from actual observation, must be of value in such studies. In the smaller towns education of the old and young in health-matters, school-hygiene, etc., is as necessary as in the larger cities. Epidemics of contagious disease often create great havoc in the village communities from lack of centralized power to prevent the spread or discover the cause.

Many towns have already organized boards of health consisting of medical men. Every community, no matter how small, should have such a department, and it is for the younger men to form and control such an organization, and to guard it jealously from political debauchery. We know that no such encouragement is extended to the young physician who wishes to carry the "gospel of health" to the heathen in the city slums as he receives who, as medical missionary, declares his intention of seeking to convert the far-away African or Hindoo. But as a profession we are self-sacrificing enough to do our duty whether we see a return for it or not.

We believe that the physician can play a more important part than heretofore in public affairs; that it is not beneath his dignity nor without his province to do so; that the younger members of the profession can make themselves especially useful as educators, and that the science of medicine itself can be benefited in consequence.

EDITORIAL COMMENTS.

Authority of Boards of Health to Suppress Nuisances.—In a matter so serious as that of the public health, the Court of Appeals holds, in the recently decided case of Board of Health *v.* Copcutt, that a board of health ought not to wait until some citizen is sick or dead before it prevents or abates the nuisance causing the injurious result. Thus, when a statute is provided specially for the removal of a nuisance, the people are not compelled to await its completion, but are awarded an injunction to restrain the further erection, and compel the removal so far as erected. So a board of health has power to prevent a reconstruction and a reinstatement of what it has declared to be, and what the court has found in fact was, a public nuisance. In this particular case,

which was an action brought by a board of health to enjoin the maintenance of a dam, the owner contended that when he built the dam the stream was clean, and the water pure; that he never did anything to pollute it, or to make it injurious to health; that it came into that condition from the acts of others; and that his property was destroyed, and he was forbidden to restore it, without any fault of his own. The court answered to this that the dam and pond were his. He had a right, it was his duty, to keep them clean and safe, or dispense with them entirely if he could not. His dam was a pocket to catch and hold all filth thrown in above. He well knew it, and could not sit still and suffer his own property to become an intolerable nuisance, and say it was not his fault. When pestilence is forcing its way into our harbors, and danger and death approach through all rot and filth, it is the condition with which boards of health must grapple, and the condition which must be abated or removed, without regard to the question who caused the trouble. However innocent the owner of the property may be in creating the condition or maintaining it, he is bound to abate it upon the proper official request, and, if he refuses, he becomes at once responsible for the existing condition, as continuing a nuisance which it was his right and duty to remove and suppress.

The Editor Blesses the Advertisers.—We feel sure that one of our active Western contemporaries (who, by the way, has been making a most commendable fight for medical-practice reform in his State) would feel sorely aggrieved if any but himself had suggested the possibility implied in the following quotation taken from a recent number of his not uninfluential journal: "Not infrequently as much or more valuable information may be found in the advertising than in the pages devoted to what is known as pure reading matter." Unconsciously, perhaps, with the thought of removing the force of this imputation he endeavors to restore a condition of equality by introducing into his editorial columns commendatory notices of a number of his (pecuniarily) most important advertising patrons. To augment this missionary work we would suggest that our ingenuous contemporary might make up his entire journal with advertising matter. There would then be no odious comparisons or invidious distinctions to make, and he might feel sure that the profession were being well educated, according to the standard that he seems to have established.

Original Articles in The Medical News.—The *Journal of the American Medical Association* publishes the results of a statistical inquiry as to the original articles that have appeared in the principal weekly medical journals of the United States during the past year. We are gratified to learn that THE MEDICAL NEWS in the last volume devoted a larger number of pages to original articles than any of its competitors, the *Journal* of the Association of course excepted. We doubt not if the distinguished editor of the *Journal* had been permitted to have his way—that is, if he had been allowed to use his excellent editorial discrimination—the number of his pages of original articles would have been much less. We reproduce the figures in by no means a boastful spirit, but we confess our pleasure in finding that other periodicals with a higher subscription price, and claiming a greater number of total pages, do not in the year give as many pages of orginal articles as THE NEWS. This just pride is increased when we recall the fact that every contributor to the columns of THE NEWS has received due compensation, a feature which we believe to be peculiar to THE NEWS. "The laborer is worthy of his hire." We append the *Journal's* figures.

July 1 to December 30, 1893.	Journal American Medical Association.	New York Medical Record.	New York Medical Journal.	Boston Medical Journal.	MEDICAL NEWS.
Number of original articles . .	240	176	158	132	175
Number pages original articles	665	334	380	300	397
Total number pages	1024	860	816	660	756

The Exciting Cause of an Injury Viewed Legally.—According to a decision of the Supreme Court of Wisconsin, in the case of Vosburg *vs.* Putney, medical experts can testify to the exciting cause of an injury. In this case action was brought to recover for an injury caused by one boy kicking another, a little below his knee, while in school. The defence made was that if disease existed in the boy's leg before the injury complained of was inflicted, and such injury merely served to accelerate its progress or to locate the point of suppuration, and was not the original cause thereof, or if the proximate cause of the inflammation in the leg was the presence of pus-germs which obtained entrance by way of a previous wound above the knee, no recovery could be had. But the court refused to so instruct the jury. The law on this point was held to be that if the kick inflicted was the exciting cause of the injury complained of, and such injury was the natural consequence of the kick, the one inflicting it was liable therefor, although the physical condition of the person kicked might have aggravated the injury. The jury in this case assessed the damages at $1200.

The Use of Patent Medicines as Evidence of Legal Want of Care.—A so-called patent medicine may or may not be a curative agent, and there must be some evidence upon this point before an issue of fact is raised. So holds the Court of Civil Appeals of Texas, in the recently decided case of Gulf C. & S. F. Railway Co. *vs.* Brown, which was an action brought by the latter to recover damages from the railway company for a personal injury, and in which one of the defences pleaded, besides a general denial, was that the man had not secured proper treatment, or taken proper care of himself, thereby aggravating his injuries, and also having resorted to the use of patent medicines. The fact that he had used, and applied to his hurts, a patent medicine, the court continued, was not evidence of the want of care in treating his injuries. It seems strange that a railroad or any other product of civilization could have penetrated so far as the dense barbarism of that judge's district.

Comparison of City Death-rates.—Our esteemed contemporary the *Philadelphia Press* takes exception to the views advanced recently by THE NEWS concerning the percentage of deaths in some large cities. The *Press* argues that the higher death-rate of New York over London may be accounted for to a considerable extent by the greater extremes of temperature, and by the overcrowding in the tenement districts. Extremes of temperature are certainly as great in Chicago as in Philadelphia, and comparison of the numbers of deaths from diseases of the respiratory tract does not bear out the contention of our excellent contemporary. It must also be noted that it is not likely that New York is more overcrowded than some districts of London and Berlin, and further analysis of the mortality statistics shows that the tenement district in New York is not distinguished by a specially high death-rate. Infant mortality, as the *Press* notes, is high in American cities during the midsummer, but a large proportion of such deaths are due to preventable diseases. When we turn to the typhoid statistics we see the difference in the sanitary state very clearly. London has a typhoid death-rate of 0.49 per thousand per year, Berlin slightly less, 0.42; while New York's death-rate from this disease is more than double that of Berlin, that of Philadelphia over five times, and that of Chicago still more.

If the population of Philadelphia equalled that of London, with no alteration of its sanitary conditions at present existing, there would be in Philadelphia twenty-seven hundred deaths annually from typhoid fever against four hundred and twenty-five in London. The *Press* also argues that the somewhat lower death-rate (from all diseases) in Chicago than in New York or Philadelphia is due to the greater number of young adults in the Western city. But would not the same argument apply to our Eastern cities in comparison with London and Berlin? The proportion of young adults must be rather larger in American than in European cities. If this is the case the death-rate is still more disproportionate than the figures at first sight indicate. It is undoubtedly true that natural and irremediable conditions operate in some cities to render the mortality higher; but it is also true that an analytic study of the mortality lists shows that a large element of fatality is contributed by diseases the causes and means of prevention of which are known and practicable to municipal administrations.

It strikes us that it would be more needed advice to our citizens to warn them of such things as the dangers of drinking the sewage of several hundred thousand people rather than to blunt the edge of needed criticism by labored arguments in the old art of *laisser-faire*.

Enterprise, Journalistic and Professional, is displayed by the custom quite common nowadays in certain parts of the country, for the local daily newspaper to publish a special edition largely devoted to biographic and eulogistic notices of "Successful Doctors." The details of the successful careers are blazoned with liberal colors, the office hours, specialties, telephone-numbers, etc., following in each case. The fellow who pays the most, and furnishes the most glowing and particularized accounts of himself, and who orders the greatest number of hundreds of extra and marked copies for distribution to his *clientèle*, is, of course, he that "takes the cake." It is mortifying to find certain names in these lists of dishonor.

Non-expert Testimony as to Blood-stains.—Persons not experts are allowed, in proper cases, to testify as to what they have seen, when, perhaps, expert testimony would be more conclusive. Thus the Supreme Court of Missouri holds, in the recently decided case of State *v.* Robinson, that a non-expert can testify that the stains which he observed on a certain garment "looked like" blood-stains. This court also says, in the same connection, that frequently the *opinion* of a witness as to the appearance of an object he has seen is the best and only evidence obtainable; nevertheless it is competent.

The Physicians of Ohio have been holding a convention at Columbus, and have formulated a medical-practice bill for presentation to the Legislature. It is thought that at last some sort of control of the medical abuses of the iniquitous conditions prevailing may at last be reached. Any five men, simply upon application to the Secretary of State, can secure a charter for a college and grant diplomas for any or for no consideration whatsoever.

The Way to Stop the Reading-notice Evil.—An eminent professor in one of our universities writes us that, after vainly protesting to the editor of one of our foremost medical journals against concealed advertisements in the reading columns, he has ordered the journal to be sent to him no longer.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, held at the New York Academy of Medicine, Tuesday Evening, January 2, 1894.

DR. M. ALLEN STARR, PRESIDENT, IN THE CHAIR.

DR. J. LEONARD CORNING narrated the case of a young man, eighteen years old, who had received a severe kick directly over the right ear while engaged in a game of foot-ball. He was first seen by Dr. David Webster, who, upon careful examination, found that there was total deafness on the right side; aërial conduction and bone-conduction were suspended. There was no trouble in the middle ear, and the drum was in perfect condition. There was slight bleeding from the external ear, but no evidence of fracture. A rapidly interrupted faradic current was applied to the ear and allowed to pass for about ten minutes, when the hearing was so far restored that the patient could hear a watch at a distance of six inches. Before making the application, the external meatus was plugged with absorbent cotton moistened in salt-solution. A severe tinnitus that had coexisted with the deafness was also relieved. Dr. Corning said that he had no idea what the lesion was, or why improvement followed the use of the current; it was employed simply as an empiric measure. The young man's hearing is now entirely restored. There was no suspicion of hysteria. The visual field was not tested.

DR. DAVID WEBSTER said that he supposed the deafness was due to concussion either of the auditory nerve or of the labyrinth, of which he has seen cases reported.

Temporary blindness has been produced by a sudden blow on the brow, without ophthalmoscopic or other lesion. Most of those cases, however, are due to fracture of the base of the skull, involving the optic foramen and producing nerve-atrophy. He has never seen a case similar to the one reported.

Dr. Starr suggested that the case might have been one of traumatic hysteria or concussion of the auditory nerve. In consultation with Dr. Jacobi he recently saw a case of total deafness of central origin, in which temporary improvement in the hearing was produced by the use of a strong galvanic current—about six milliampères, which is a strong current for the acoustic nerve.

Dr. J. Arthur Booth said that in a number of cases of tinnitus he has employed the galvanic current with marked benefit. He also never saw a case similar to the one reported.

Dr. Ralph L. Parsons read a paper entitled "Report of a Case of Akromegaly." The patient was a man, thirty-six years old, with a negative family history. He had never had venereal disease and had not used alcoholic stimulants. He was in good health until eighteen years ago, when he had an attack of malarial fever. From this he recovered and has had no recurrence since. Ten years ago he was told that he stooped and carried his head to one side. Two years later he began to suffer with pain in the back of the head. This came on mostly at night, and not oftener than once a week. Subsequently the headaches occurred more frequently by day than by night. Latterly they have increased in frequency and duration and have often been excruciating in degree. The pain was usually most severe at the occiput, but would also involve the left parietal and frontal regions; the right side of the head was unaffected. About six years ago his attention was first called to the large size of his hands. He then for the first time perceived that they were of extraordinary size. He does not know for how long a time this increase in size has been taking place. He cannot say whether or not the hands have increased in size during the past six years.

In October last the patient weighed 227 pounds. He presented no pronounced symptoms of organic disease. His hair was rather coarse, but natural in condition. The left ear was slightly thickened. The forehead was retreating; the superciliary ridges quite prominent. There was no exophthalmos. The malar bones were rather prominent; the cheeks appeared sunken; the nose was broad and full at the nostrils; the lips were normal. The tongue was decidedly enlarged, obstructing free articulation; the alveolar processes normal; the teeth not separated; the chin was elongated. The head was inclined strongly and habitually to the left side and forward. The hands were large and spade-like, the right hand being decidedly the larger. The soft tissues of the hands and fingers were firm and resilient, as though infiltrated by an elastic substance; they did not pit on pressure. The wrists were rather large; the arms normal; the thorax and pelvis normal. The feet were large, but perhaps not more so than in the case of many men of the same weight. The patient has perspired very freely for the past ten years; but of late the perspiration has been decidedly offensive. Besides the headache referred to, the patient also complained of pain in the left ear and eye, the latter coming on after reading or using the eye in a strong light. He does not think that his eyesight has become impaired. Appetite and thirst are excessive. There are no marked mental symptoms.

On the 21st of October, by advice of Dr. Starr, the patient began the use of a thyroid extract, five drops three times daily. The dose was gradually increased until the man received fifteen drops three times daily. With the exception of tonic baths, general hygienic measures, and a regulation of the diet, no other treatment was given. At the present time the patient reports that he is feeling decidedly better. He is more cheerful, and his headache has been relieved to a great extent. It has not, however, entirely disappeared. There seems to be no change in the dimensions of the hands. The weight has increased rather than diminished. There has been a great improvement in the subjective condition, but there is still a reasonable doubt whether this improvement is due to the direct action of the medicine or to the patient's mental status induced by the fact that something is being done for his relief.

Dr. Starr said that the use of thyroid extract in the case narrated is purely empiric. The supposed lesion of akromegaly is an increase in the size of the pituitary body. It is questionable whether it is in any way related to the thyroid gland. The eye-symptoms in the case narrated are interesting, because in two other cases of akromegaly coming under observation there was a concentric diminution of the visual field, and in one hemianopsia; the latter symptom is quite common, and is probably due to pressure on the chiasm by the enlarged pituitary body. In one case of akromegaly seen at St. Luke's Hospital death resulted from pneumonia, and at the autopsy the pituitary body was found to be normal. There was nothing to account for the peculiar growth of the bones.

Dr. Parsons said that it is generally supposed that there is a sort of relationship between akromegaly and myxedema; whether this belief is well founded or what that relationship is is not known.

Dr. J. Leonard Corning read a paper entitled "Some Less-Cultivated Phases of Psychology; Considerations on the Genesis of the Feelings, or the Relation of Desire to the Will-function; Practical Deductions therefrom concerning the Management of Various Psychopathic Conditions." He traced the relationship of the desires to the function of the will, and showed the importance of psychic influences in the correction of certain morbid mental conditions. In neurasthenia, simple melancholia, hysteria, and other functional nervous troubles the desires are best evoked and fostered through the special senses, notably through the sight and hearing, while at the same time the receptivity of the sensorium is increased by proper stimulation. The effect thus gained is not necessarily evanescent. Due heed should also be given to the general bodily condition. Nutrition must be improved and gouty and other morbid tendencies antagonized. The question of influencing the mind to the advantage of the patient is certainly an important problem in neurology, and one well worthy of discussion. In concluding the paper reference was made to the loss of prestige that has apparently overtaken hypnotism, which in too many instances only

served to substitute a veritable neurosis for the morbid condition that it was sought to modify.

DR. W. H. THOMSON said that his own plan in the treatment of melancholia has been not to appeal to the will of the patients at all; it is only discouraging to them to tell them to think less of their condition; their train of thought should be involuntarily changed by new objects brought to their senses, either through the eye or the ear. By means of a change, using the word in its broadest sense, a change of scene, of surroundings, and of society, the endeavor should be made to produce an involuntary displacement of the morbid ideas.

DR. WILLIAM H. THOMSON read a paper entitled "Ergot in the Treatment of Periodic Neuralgias. He gave the histories of a number of cases of severe periodic neuralgias in which the symptoms were promptly relieved by the use of ergot in large doses. In all of these cases the disease was of long standing, and the usual remedies had been employed without avail. The method of administering ergot in migraine is as follows: The fluid extract of the drug is employed, combined with an equal quantity of elixir of cinchona, to overcome the tendency to cause nausea. Two drams of this mixture are to be taken in water as soon as the premonitory symptoms of the headache are noticed, and the patient is advised to lie down and keep very quiet. If, after an hour, the headache continues, a second similar dose is taken, and then a third in another hour, if necessary. As nausea is such a general accompaniment of migraine, it is provided that if either of the doses be vomited, the medicine should then be taken in an enema of two ounces of water. This medication, it was said, rarely fails to arrest the attacks, even in cases of long standing, and with a preventive course of intestinal antisepsis in the intervals, the relief from the malady has often proved permanent.

DR. JOSEPH COLLINS said that he had recently employed ergot in the treatment of several cases of periodic neuralgia. In one case, in which huge doses of Warburg's tincture, quinin, potassium bromid and iodid had been given without benefit, dram-doses of ergot were followed by a marvellous improvement. In another case, in a lady, forty years old, who had long been under treatment for migraine, the therapeutic value of ergot was discovered accidentally; it was given to check a menorrhagia and it at the same time relieved the headache.

DR. C. A. HERTER said that in the treatment of cases of migraine he lays greater stress upon the diet and nutrition than he does upon drugs. He employs very few drugs, chiefly aconitin. He is decidedly opposed to the use of the antipyretics.

DR. CORNING said it is important to determine whether the pain is extra-cranial or intra-cranial. He referred to the value of compressed air in relieving intra-cranial pain. External pains, on the other hand, are aggravated by the compressed-air treatment.

DR. THOMSON referred to the fact that quinin, even in small doses, when combined with ergot, appears to produce cinchonism much more quickly than when given alone. In only one of the cases reported was there any antecedent history of malarial infection, and in that case the patient simply had resided in a malarious district. Very likely there was a malarious element in the other cases, of which the nervous symptoms were the only manifestations. Dr. Thomson also referred to the fact that intercostal neuralgia is often accompanied by sciatica; also the occurrence of sciatica after pleurisy. The latter combination he has noticed in about twenty cases.

NEWS ITEMS.

The Medical Society of the State of New York will hold its eighty-eighth annual meeting February 6th, 7th, and 8th, in the City Hall, at Albany. The following provisional scientific program has been arranged:

Hemorrhagic Serous Effusion into the Pleura, with Report of a Unique Case; by William S. Cheesman, Auburn. Researches on the Eliminating Power of Diseases, and the Relation between Vaccina and Enteric Fever; by William Finder, Troy. Pneumonia of the Aged; by John H. Pryor, Buffalo. Diagnosis and Nomenclature of Fevers—second paper; by Nelson G. Richmond, Fredonia. The Therapeutics of Oxygen; by Arnold W. Catlin, Brooklyn. Simple Methods in the Diagnosis of Nervous Diseases; by E. C. Spitzka, New York.

Discussion on Diphtheria.—Pathology—Status Præsens; by Thomas E. Satterthwaite, New York. Observations on Diagnosis, and some Sanitary Aspects; by A. Walter Suiter, Herkimer. Croup and Diphtheria—Unity or Duality; by William H. Daly, Pittsburg, Pa. The Comparative Status of Intubation of the Larynx; by Joseph O'Dwyer, New York. Complicated Intubation of the Larynx; by William Hailes, Albany. The Local Treatment; by Abraham Jacobi, New York. The General Treatment; by Edward F. Brush, Mount Vernon. The Use of Tartar Emetic in Diphtheria; by H. DeV. Pratt, Elmira.

Treatment of Depressions in the Skull of the Newborn; by David D. Jennings, New York. Immediate Trachelorrhaphy; by Henry C. Coe, New York. Lymphadenoma of the Uterus; by H. J. Boldt, New York. Senile Endometritis; by A. J. C. Skene, New York. Treatment of Endometritis; by Herman E. Hayd, Buffalo. Nine Years' Experience with Alexander's Operation for Shortening the Round Ligaments of the Uterus; by Paul F. Mundé, New York. Pelvic Abscess; by Walter B. Chase, Brooklyn. A Case of Hysterectomy for Retention of the Menses; by William Gardner, Montreal.

Discussion on Menstruation and its Abnormalities.—Introduction and Normal Function; by Andrew F. Currier, New York. Dysmenorrhea—its Causes and its Treatment; by Howard A. Kelly, Baltimore, Md. Profuse Menstruation; by Charles P. Noble, Philadelphia, Pa. Scanty Menstruation; by Franklin Townsend, Jr., Albany. Irregular Menstruation; by Charles A. L. Reed, Cincinnati, O., and E. W. Cushing, Boston, Mass. Menopause—Natural and Artificial; by Arthur W. Johnstone, Cincinnati, O.

Urethral Caruncles; by Edward N. Liell, New York. The Physical Causes of Sexual Debility in the Male, as Distinguished from the Psychical Causes; by F. R. Sturgis, New York. The Surgical Treatment of the Prostate Gland; by Seneca D. Powell, New York. The Fable of the Egg; by William S. Ely, Rochester. Artificial Immunity; by Henry R. Hopkins, Buffalo.

Clinical Notes on Psoriasis, with Especial Reference to its Prognosis and Treatment; by L. Duncan Bulkley, New York. Spinal Supports and Braces—the Indications for their Use—History and Modern Perfection (to be illustrated with forty lantern-slides); by A. M. Phelps, New York. Histology and Pathology of the Spinal Cord (illustrated with lantern-slides); by Wm. C. Krauss, Buffalo.

Discussion on Abdominal Surgery.—Disputed Points in the Treatment of Pelvic Surgery; by Joseph Price, Philadelphia, Pa. Influences Affecting the Results of Abdominal Operations; by J. F. W. Ross, Toronto, Canada. Hemorrhage after Abdominal Section: its Place in Statistics; by A. H. Buckmaster, New York. Cysts of the Epigastrium; by Dudley P. Allen, Cleveland, O. The Technique of the Abdominal Incision; Methods of its Closure and its Subsequent Management; by W. W. Potter, Buffalo. Operative Procedure for the Relief of Obstruction of the Common Duct; by W. E. B. Davis, Birmingham, Ala. Two Cholecystotomies for Gall-stones with Recovery, with Remarks on Operative Methods based upon Five Cases; by William Wotkyns Seymour, Troy. Gall-stones, the Exciting Cause of Malignant Disease; by Rufus B. Hall, Cincinnati, O. Appendicitis; by Charles McBurney, New York. An Analysis of 150 Personally Observed Cases of Appendicitis; by George Ryerson Fowler, Brooklyn. A Conservative View of the Treatment of Appendicitis; by William S. Tremain, Buffalo. Some Observations Relative to the Treatment of Suppurative Appendicitis, with Report of Cases; by Willis G. Macdonald, Albany. Palpation of the Vermiform Appendix; by G. M. Edebohls, New York. The Inch and a Half Incision, and Week and a Half Confinement in Appendicitis; by Robert T. Morris, New York. Report of a Case of Post-peritoneal Abscess from Duodenal Ulcer, with Presentation of Specimen; by L. S. Pilcher, Brooklyn. Intestinal Perforation in Strangulated Hernia; by William B. DeGarmo, New York. Remarks on the After-treatment of Abdominal Section; by Carlton C. Frederick, Buffalo. The Unexpected as Sometimes Observed in Abdominal Surgery; by A. Vander Veer, Albany.

Recent Methods of Gastrostomy for Stricture of the Esophagus; by Willy Meyer, New York. The Influence of Physiological Rest on Prolapse of the Rectum; by Joseph D. Bryant, New York. A Contribution to the Subject of Excision of the Larynx; by Charles A. Powers, New York. Observations on 118 Cases of Cancer of the Breast, with Especial Reference to its Radical Cure by Operation; by William T. Bull, New York. The Treatment of Hernia (supplement to paper read last year); by Alexander Dallas, New York. Some Cases of Brain-Surgery; by Herman Mynter, Buffalo. The Needlessness of a Mydriatic in Adjusting Glasses to the Eye; by D. B. St. John Roosa, New York. The Action of Scopolamin on the Eye; by Thomas R. Pooley, New York. The Treatment of Nasal Hemorrhage; by John O. Roe, Rochester. Report of a Case of Injury to the Cauda Equina; by Hermon C. Gordinier, Troy.

The Treatment and Prevention of Epilepsy in the Young; by Graeme M. Hammond, New York. The Practical Workings of the Law for the Care of the Insane; by Carlos F. Macdonald, New York. Lunatics in Public Places; by Wallace J. Herriman, Rochester. The Subfrontal Gyre (Broca's Convolution) in Man and Apes; by Burt G. Wilbur, Ithaca. Akromegaly; by Floyd S. Crego, Buffalo. Report of a Case of Akromegaly, with the Exhibition of the Subject; by Frederick Remington, Rochester. Uremic Hemiplegia; by Reynolds W. Wilcox, New York. Glycosuria; by W. B. Vanderpoel, New York.

Dr. S. Guttmann, editor of the *Deutsche medicinische Wochenschrift*, died on December 21st at Berlin as the result of a virulent attack of influenza, at the age of fifty-four years. The post-mortem examination disclosed the existence of an adherent pericardium, and sclerosis of the aorta and coronary arteries. In addition to his editorial labors Guttmann was an able clinician and contributed generously to medical literature. He was collaborator with Leyden of the collective investigation into the influenza-epidemic of 1889–90, made at the instance of the Berlin Society for Internal Medicine.

Dr. Richard C. Norris has been elected physician in-charge of the Preston Retreat, in succession to Dr. Joseph Price, who had resigned. Dr. Norris was graduated from the Medical Department of the University of Pennsylvania in 1887, and was at once elected a resident physician in the Philadelphia Hospital. He has for a number of years been an instructor in Obstetrics in the University of Pennsylvania, and is also one of the editors of the *Annals of Gynecology and Pediatry*.

International Sanitary Congress.—The President of the United States has appointed Dr. E. O. Shakespeare, of Philadelphia, Dr. Stephen Smith, of New York, and Dr. P. H. Bailhache, of the United States Marine-Hospital Service, delegates to represent the United States at the International Sanitary Congress, to be held in Paris on January 24th.

A Four-years' Course at Jefferson Medical College.—At a meeting of the Faculty of Jefferson Medical College, held on January 8, 1894, it was unanimously resolved to institute a compulsory four-years' course with the session of 1895–96.

The Lehigh Valley Medical Association will hold its Sixth Winter Conversational Meeting at the Eagle Hotel, Bethlehem, Pa., on Thursday, January 25, 1894, at 10 o'clock A.M.

Books and Pamphlets Received.

Traitement du Pied Bot Varus Equin par l'Ablation de la Plupart des Os du Tarse. Par Le Dr. Just Lucas-Championnière. Extrait du Journal de Médecine et de Chirurgie Pratiques. 1893.

De l'Emploi des Essences et Surtout de l'Essence de Cannelle ou Cinnamol comme Topique en Chirurgie. Par Le Dr. Just Lucas-Championnière. Extrait de Journal du Médecine et de Chirurgie Pratiques, 1893.

Are Coccidia Found in Cancer? By Joseph McFarland, M.D. Reprinted from the University Medical Magazine. 1893.

Sulla Lussazione Volontaria dell'Anca, con un Nuovo Caso. Del Dott. Davide Giordano. Milano: Tip. Pietro Agnelli, 1893.

Acute Ulcerative Endocarditis: A Brief Résumé of the Pathology of Eight Cases. By Ludwig Hektoen, M.D. Reprinted from the Journal of the American Medical Association, 1893.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

CLINICAL REMARKS ON THE EXTERNAL USE OF GUAIACOL IN REOUCING HIGH TEMPERATURE IN TYPHOID FEVER AND OTHER FEBRILE DISEASES.[1]

BY J. M. DA COSTA, M.D., LL.D.

THE first case to which I shall call your attention this morning is one of continued fever, of low type. It is not, however, on account of the febrile symptoms, it is not on account of the diagnostic points of the case, that I now bring this patient into your presence, but rather because we have been pursuing a line of treatment which, in many respects, is untried, and which, I think, gives promise for the future.

This boy, who is sixteen years of age, a peddler, was admitted to the hospital on the 7th of this month. He stated that he had been feeling ill for some time, and that for about two weeks previously he had experienced headache, weakness, loss of appetite, and general bad feelings, for which he had consulted a physician four days prior to admission, but that he did not go to bed until he came into the ward. When admitted he had a temperature of 105.4°. His other symptoms were not of a grave character; in fact, the high temperature was the most striking feature. There was no headache, no delirium, and he had fairly good rest at night; I am sure I am right in saying that it was a case of extremely high temperature in which the nervous symptoms did not correspond with the degree of temperature. As regards the pulse, it ranged from 94 to 104; as regards the respiration, it was observed to be from 28 to 32 in a minute; the bowels were constipated. There were signs of slight pulmonary congestion in the lower lobes. No eruption was present, although it was diligently sought for; there is certainly none to-day upon his chest and abdomen, as I examine him before you, nor has any been found on the back. He has now reached the eighteenth day of the disease, as nearly as we can make out. His temperature this morning is 101.8°. He has no cough; the splenic dulness extends to the margin of the ribs. The absence of diarrhea is still to be noted. In truth, the abdominal symptoms, so usually present in typhoid fever, were so markedly wanting that, for a time, we doubted whether, after all, this was not really a case of influenza of low type in which the temperature, by way of exception, had attained extraordinary height. But the long duration of the disease, now in its eighteenth day, and the steadiness of the fever, point to the conclusion that it is a case of typhoid fever from which the usual intestinal symptoms are absent.

Yet it is not in order to discuss the subject of diagnosis, however interesting, that I bring this case before you, but rather to examine the means that we adopted to check the fever and to reduce the height of the temperature. Now the usual means for the relief of the high temperature in typhoid and other continued fevers is the cold bath; it is for the most part safer and better than the internal administration of the antipyretics of the coal-tar series. The present case is one in which you may say that the cold bath was preëminently indicated; and so it was. But in this patient I decided to resort to an article that we had been using with good results in other cases in the hospital for reducing temperature. I might state that I had long been looking for a therapeutic agent which, externally employed, would reduce temperature in cases of fever, without the disturbance incident to the bath. Some years ago I made use of spongings with menthol added to water. The patients liked this treatment extremely, but we gave it up; for, notwithstanding the attention of our nurses, and the faithfulness with which the sponging was kept up, we did not succeed in keeping down the temperature, when it ran very high, more than a degree below what sponging with cold water alone did.

I do not, save in rare instances, approve of the use of the ordinary antipyretics in typhoid and other low fevers, on account of their depressing effects; and as I have often had good results from sponge-baths, when not employing the general bath, I continued to look around for some agent to be applied to the general surface of the body that would have a marked effect in reducing temperature. In a case of pulmonary tuberculosis that Dr. J. Solis-Cohen and I saw together, he mentioned that he had succeeded in lowering the fever in tuberculous patients by the external application of guaiacol, and he spoke of several patients suffering with tuberculous laryngitis in whom, after the application of this agent to the throat and front of the chest, the reduction was marked, confirming thus the observa-

[1] From a lecture delivered at the Pennsylvania Hospital, January 13, 1894.

tions made by Bard in tuberculous cases. So far as I can learn, the powerful antipyretic effect of guaiacol when applied to the skin was first pointed out by Sciolla.[1] Bard's observations on tuberculous patients followed,[2] and were soon corroborated by Lannois. The treatment is not regarded as suitable when there are cavities in the lungs, or in cases of pneumonic consolidation, though I believe it has been used in a few cases of pneumonia. Ordinarily from one to three grams were used for each application, rubbed over the affected area in the lungs, or painted on the thigh or the back, the part being covered with an impermeable dressing.

Upon reflection on these observations, it occurred to me: Why not make use of guaiacol in systemic fevers in the same way? So for the last two months, with the aid of my very efficient resident physician, Dr. Branson, I have been engaged in making observations upon fever cases, especially typhoid-fever cases, the results of which I will now report to you. I may say that the investigation was begun without preconceptions. The results were positive and conclusive.

The temperature-chart of the case before you (Chart No. I) is shown herewith. Observe the drop from 105.4° to 98.6° on the night that he was admitted. After the high temperature had been recorded thirty drops of guaiacol were painted upon the surface of the abdomen, in the right iliac region. The remedy was rubbed in for about fifteen minutes. The axillary temperature was then taken every fifteen minutes for two hours, and at periods of one hour afterward. The remedy was applied first at 6.15 P.M.; and at 9.45, three hours and a half later, you observe that the temperature had fallen to 98.6°, or nearly seven degrees, surely a tremendous reduction. The next rise was at midnight, when the temperature was 103.4°; therefore a permanent reduction of two degrees was obtained. At 1.30 A.M., the guaiacol was again applied, and one hour later the temperature was 102°; half an hour later it was 98.2°, and the patient had a slight chill. He has had, in all, sixteen of the treatments in seven days. Every one has been followed by a most distinct reduction in the fever. In all of them we notice that this reduction of the temperature is a slow one. We note, also, that the lessening of the fever-heat is not attended by any appreciable difference in the pulse, or by a difference of only a few beats. The reduction is not accompanied by any disturbance of the nervous system, but a chill happened three times in this case, when the temperature fell to 98°, the chilly sensations beginning when the temperature reached 101°. The chills were not very marked, however, and were what the patient describes as "dumb chills." As regards the effects of this agent upon the nervous system, I wish particularly to point to their absence. There was no increased debility, no delirium, no depression or sign of collapse, nor, indeed, any manifest disturbance of nerve-function.

I have dwelt in this case on the treatment of the symptom of high temperature by the local applications of guaiacol; let me state that this was everything in the way of treatment that was employed, except that whiskey, half an ounce every three hours, was given to sustain the circulation. For a short time, when pulmonary symptoms were present, ammonium carbonate was given. The general treatment, therefore, was the antipyretic one. It was exactly a case that ordinarily would have been treated by cold baths.

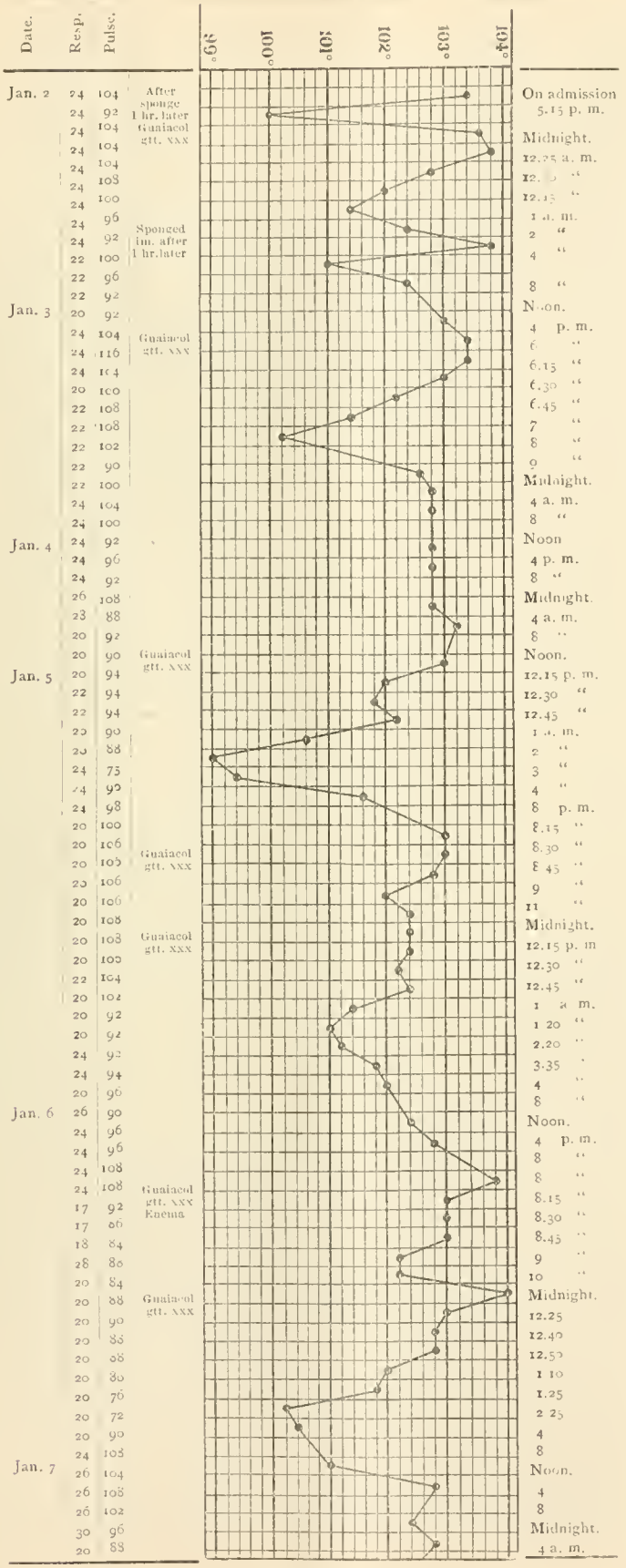
The temperature of the patient this morning is 102°; his tongue is moist and clean. I will prescribe for him eight grains of quinin a day and still administer the stimulant in the same amounts. We will also continue the liquid diet; but it will be unnecessary to resort to the local applications of guaiacol, unless the temperature should again show a tendency to rise to its former height.

I have many other cases illustrating the use of the same remedy, but I will not go into the details of the other cases. I would call your attention, however, to the temperature-records of a few of them. Here is the chart in the first case in which we used the remedy, one of typical typhoid fever (Chart No. II). It was a case marked by a good deal of delirium. You will see here the same decided drops after applying the remedy, though they are not so striking as in the other case, because the temperature was not so high. The temperature here was 104.4°, therefore distinctly a case of high temperature. In this case Dr. Branson reports that after three applications the patient had no more of the marked nervous symptoms that existed prior to the use of guaiacol; he had no tremor or other nervous phenomena, but it was particularly upon the delirium and upon the high temperature that the effects of the agent were most noticeable. In this case, also, the reduction of temperature was slow and its effects were extended over a long period. Sometimes there was no result for an hour, and then the reduction occurred gradually. This lessening of the fever-heat went on even to the normal, with no change in the pulse or respiration, no obvious change in the urine—in fact, no effects manifested except upon the temperature. and, as just stated, upon the delirium. Sweating occasionally happened, but was not liable to be great.

I will briefly refer to the chart in case No 3, merely to show that you may go too far with this powerful heat-reducing agent. This was one of our earlier cases. We applied forty drops, but with a

[1] Semaine Médicale, 1893, No. 21.
[2] Lyon Médical, June, 1893.

(CHART I.)


Date. Resp. Pulse.
99° 100° 101° 102° 103° 104°
Jan. 2 24 104 After sponge
24 92 1 hr. later
24 104 Guaiacol
24 104 gtt. xxx
24 104
24 108
24 100
24 96
24 92 Sponged
22 100 1m. after
22 96 1 hr. later
22 92
Jan. 3 20 92
24 104 Guaiacol
24 116 gtt. xxx
24 104
20 100
22 108
22 108
22 102
22 90
22 100
24 104
24 100
Jan. 4 24 92
24 96
24 92
26 108
23 88
20 92
20 90 Guaiacol
Jan. 5 20 94 gtt. xxx
22 94
22 94
20 90
20 88
24 75
24 92
24 98
20 100
20 106
20 103 Guaiacol
20 106 gtt. xxx
20 106
20 108
20 108 Guaiacol
20 100 gtt. xxx
22 104
20 102
20 92
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Jan. 6 26 90
24 96
24 96
24 108
24 108 Guaiacol
17 92 gtt. xxx
17 86 Enema
18 84
28 86
20 84
20 88 Guaiacol
20 90 gtt. xxx
20 86
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20 80
20 76
20 72
20 90
24 105
Jan. 7 26 104
26 108
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30 96
20 88
On admission 5.15 p. m.
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12.25 a. m.
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1 a. m.
2 "
4 "
8 "
Noon.
4 p. m.
6 "
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4
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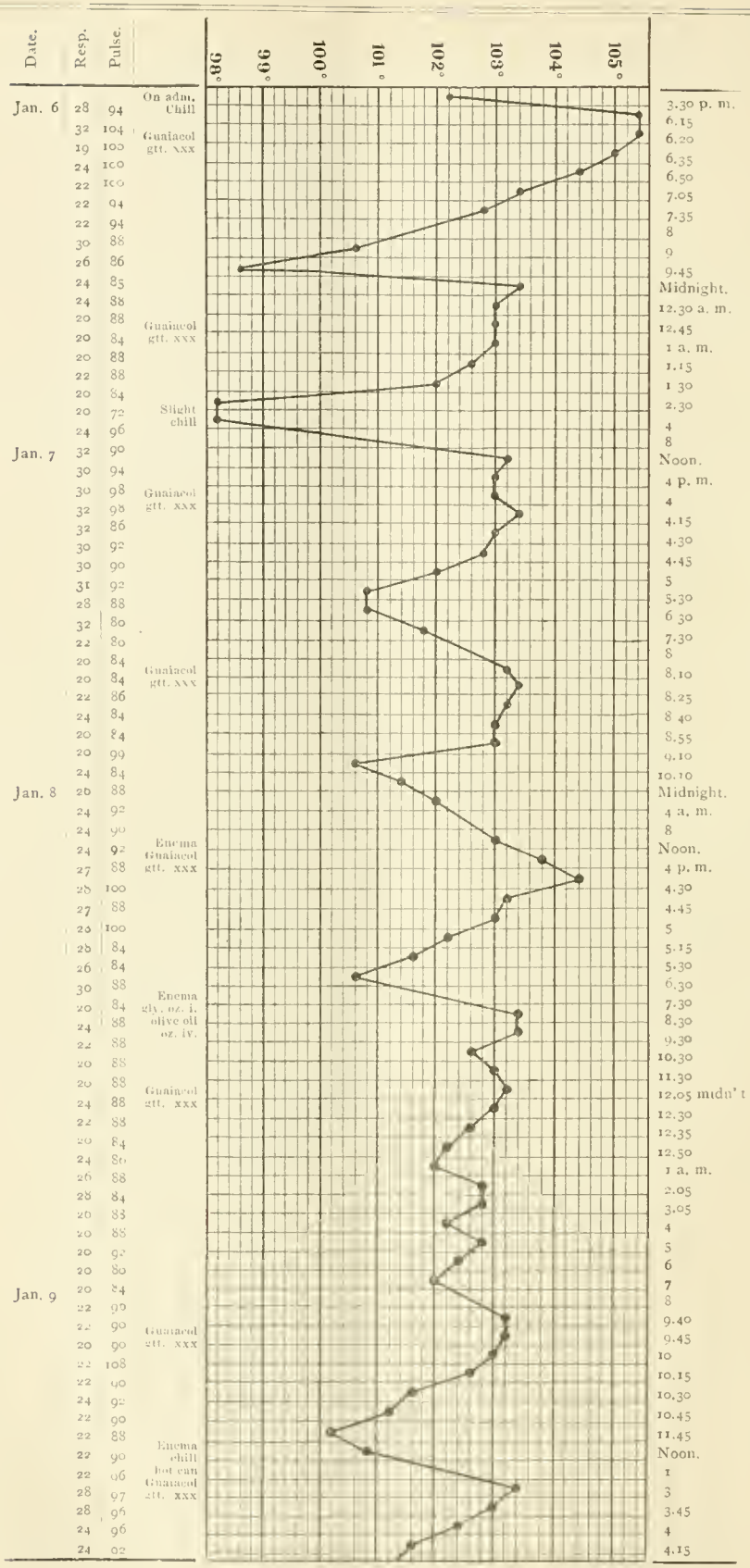
Midnight.
4 a. m.

(CHART II.)


Date.
Resp.
Pulse.
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99°
100°
101°
102°
103°
104°
105°
Jan. 6
28 94 On adm. Chill
32 104 Guaiacol gtt. xxx
19 100
24 100
22 100
22 94
22 94
30 88
26 86
24 85
24 88
20 88 Guaiacol gtt. xxx
20 84
20 88
22 88
20 84
20 72 Slight chill
24 96
Jan. 7
32 90
30 94
30 98 Guaiacol gtt. xxx
32 98
32 86
30 92
30 90
31 92
28 88
32 80
22 80
20 84 Guaiacol gtt. xxx
20 84
22 86
24 84
20 84
20 99
24 84
Jan. 8
20 88
24 92
24 90
24 92 Enema Guaiacol gtt. xxx
27 88
28 100
27 88
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28 84
26 84
30 88
20 84 Enema glv. oz. i. olive oil oz. iv.
24 88
22 88
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24 88 Guaiacol gtt. xxx
22 88
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24 80
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20 92
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22 90 Guaiacol gtt. xxx
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22 108
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22 90
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22 90 Enema chill hot can
22 96 Guaiacol gtt. xxx
28 97
28 96
24 96
24 92
3.30 p. m.
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6.50
7.05
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Midnight.
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7.30
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8.10
8.25
8 40
8.55
9.10
10.10
Midnight.
4 a. m.
8
Noon.
4 p. m.
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11.30
12.05 midn't
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temperature not nearly so high as in the other cases. We reduced the bodily heat, it is true, but more than we intended, for we sent the temperature down to 97°. This taught us that the proper dose of the agent should rarely be above half a dram; and also that we must proportion the dose to the height of the temperature. In this instance, also, it is to be noted that no other effects were present—no effects upon the pulse, upon the respiration, or upon the nervous system, and no chill, in spite of the great reduction in the bodily temperature.

Encouraged by these results in typhoid fever, we have also been using guaiacol in pneumonia. To this I may here briefly refer, although it leads me away from the subject of this morning's discussion, which is the treatment of high temperature in typhoid and kindred fevers. I will say, however, that with a temperature of 104.4° in a case of pneumonia, while we failed to obtain the striking effects that we saw in typhoid, yet guaiacol reduced the temperature two degrees. There were no noticeable effects upon the rate of breathing, and no material reduction of the pulse. In a second case of pneumonia, which was approaching the period of crisis, when, however, there would naturally be a drop, we note a reduction of 3.5°.

I have given you the results of a series of clinical investigations, begun with the sole purpose of ascertaining the effect of remedies externally applied in lowering temperatures, and in the hope of finding something that will be effectual besides the cold bath. You will ask: What general statements can we make as to the plan of treatment by guaiacol? What is its applicability, and what are its advantages? Its general applicability is this: It will be of value in all those cases with high fever-temperature—I am now speaking particularly of typhoid and other febrile maladies, and not of pneumonia and inflammatory diseases—in which you would employ the cold-bath treatment if the conveniences were present or circumstances would permit. As you know, I am an advocate of the cold-water treatment, when there are attendants to carry it out properly; but it has its disadvantages. A very important objection to the cold-water treatment is the disturbance of the patient which it necessitates—the lifting him out of bed, the plunge into the water, and subsequent drying process—all this produces considerable perturbation, and in some cases may be followed by untoward results. There is another disadvantage of the bath, and one which has particularly attracted the attention of the French physicians; it is that when there is a tendency to severe diarrhea and to deep ulceration there is always a greater likelihood of intestinal hemorrhage when the patient is much moved. Therefore, when such a tendency exists, you would abstain from resorting to the cold-bath treatment; and it is in these cases that guaiacol will be found of special advantage, used in the manner mentioned. Moreover, it is to be preferred in all instances in which much moving or disturbing the patient is to be avoided.

You may ask: What is the relative promptness of action of the methods discussed? In this respect, I think, guaiacol is inferior to the cold bath. When, as in the case shown, the temperature is 105° or more, you will get more immediate and visible effects from the cold bath. This patient would have had a more speedy reduction of temperature if he had been put in a cold bath than he had from the remedy employed. I admit this. I would, however, call your attention to the fact that the reduction of temperature is more permanent; the fall occurs more slowly and it takes a much longer time for the temperature to rise again than it does after the bath, for we all know that if a patient with a temperature of 105° is put into the bath and his temperature recedes to 100°, at the end of a few hours a high temperature is likely to return, and we have to think of giving him another cold bath. In the element of permanency the cold bath is inferior to the treatment we have been discussing.

What are the objections to the guaiacol-treatment? One of the chief is its odor, which is decidedly unpleasant in the sick-room. We have endeavored to overcome this, and are still experimenting. We have tried bergamot, only to record failure; the odor of the guaiacol overcomes that of the bergamot. We have tried also Cologne-water and oil of sassafras; our best result is from the oil of cloves.

The mode of employing guaiacol is by rubbing it upon the skin of the abdomen or thigh with a camel's-hair brush, the selected area having been first prepared by washing with soap and water. The maximum dose in our investigations in fever cases was fifty drops; and from the effects witnessed I would advise that so large a dose should be rarely used. Thirty drops is about the average dose, although sixty were employed in one case of pneumonia. The guaiacol is to be rubbed in slowly; the surface need not be uncovered during this time, as it can be applied under the bed-clothing, and it is well to cover the surface with a piece of lint and waxed paper. The dose must be proportionate to the height of the fever. It would be proper with a temperature of 103°, not to exceed 20 minims at the first trial. In one instance of malarial fever in an anemic subject in the ward of one of my colleagues, an application of 30 drops when the temperature was 103.6° caused it to drop to 97°. The guaiacol may be also applied to the skin without rubbing it in, only covering the part with lint and waxed paper. The action is the same, though not

so rapid nor so perfect. The quickest way is to paint the guaiacol on the surface, then to rub it in with the hand. Five minutes are enough for the purpose. The local sensation is not unpleasant, being like that of menthol.

How does it act? Is it by absorption through the bronchial mucous membrane or by cutaneous absorption? I believe that its effects are produced by absorption by the skin and its entrance into the circulation by this channel; being carried to the heat-centers, it acts as an anti-thermic agent. It belongs to the series of wood-tar products, and it acts apparently without the depression that follows the use of antipyrin, phenacetin, and other remedies of this group of the coal-tar products. Moreover, though there is some action on the skin, the sweating is not nearly so great.

In conclusion, I would advise you to watch the urine, for in all cases of administration of medicines by the skin it is chiefly by the urine that the medicine escapes from the system. The urine is for the most part somewhat increased, but I can also say that in all of our cases in which we used the guaiacol there was no albumin in the urine, and no signs of kidney-irritation were detected.

I hope that you will not understand that I mean that you should treat all your fever-cases with guaiacol, to the exclusion of other treatment. I simply started out to tell you how to meet the high temperature when it is necessary to meet this symptom. This ought not to prevent you from attending to the other features of the malady. But I wished to call your attention markedly to a new plan of treatment which we have employed with results that are very encouraging.

A REPORT OF TWENTY-TWO ABDOMINAL SECTIONS IN GENERAL SURGERY.[1]

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OF MEMPHIS, TENN.;
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The following is a report of my operations on the abdominal viscera during the past year. I have included only those cases in which the abdominal wall has been traversed by the knife, and the peritoneal cavity thus exposed. All cases of suppurative appendicitis and other collections of pus in which the fluid was reached and evacuated without invading the uninfected peritoneum have been omitted. Those of you who have enjoyed operating in a well-regulated hospital can appreciate the advantages accruing to the operator over those obtained in what might be termed outside general surgery. In a hospital the operator has complete control of the case; in non-emergency cases the minute details of preparatory treatment can be carried out to his satisfaction, and he operates on a patient whose secretions are all in good condition. In emergency cases, such as have been most of those presented in this report, the saving of time by reason of convenience of arrangements and having everything at hand to meet complications arising during an operation, is an all-important element in the successful ending of an operation on the abdominal viscera. The thoroughness of an operation obtainable by reason of conveniences and reliable trained assistants cannot be overestimated. The complete control over the patient enables the operator to maintain perfect quietude, as well as carrying out in detail and with promptness the all-important after-treatment, both local and general; and, in my opinion, the after-treatment of a case of abdominal surgery requires as much care and skill as does the operation itself. For these reasons I have included only those cases operated on in my infirmary and St. Joseph's Hospital, because it is manifestly unjust to operator and operation to include those cases operated upon on the outside and under unfavorable surroundings.

A careful reading will show the critical condition that most of these cases had reached when the operation was undertaken, and it has been to careful nursing and close watching in the early hours of the after-treatment that more than one of the recoveries may be accredited. In evidence of the thoroughness of the aseptic and antiseptic details, in only one instance did fatal peritonitis arise after the operation, and that presented the features of traumatic peritonitis. One death (Case XXI) occurred on the eleventh day, from acute nephritis, without any intra-peritoneal inflammation or evidence of lesion of any other organ. Excluding those cases in which the intra-abdominal condition was irremediable by any operation, and Case XXI, in which death occurred from nephritis, it will be seen that there were nineteen operations with one death.

Case II represents two operations.

Case I. *Resection of the small intestine for gangrene; end-to-end anastomosis with the Murphy button.*—On Thursday, October 12, 1893, R. H., twenty years of age, jumped from a wagon to the ground. The jar caused the descent of a right inguinal hernia, to which he had been subject for several years. He had previously been able to reduce the hernia whenever it appeared, without the aid of a physician, but on this occasion he failed, and called his physician, who, without the aid of an anesthetic, and with very little effort, apparently succeeded by taxis in pressing the hernia back into the abdomen. The patient, however, continued to complain of pain extending from the inguinal canal toward the umbilicus. There was a slight fulness or induration at the site of the internal ring, but apparently this was within the abdominal cavity. The patient's general condition was nearly normal. During the next two days, calomel, salts and oil failed to act

[1] Read before the Southern Surgical and Gynecological Association, New Orleans, November 15, 1893.

on the bowels. So also did repeated enemata of large quantities of water fail to bring away fecal matter. The abdomen was gradually becoming distended and tympanitic, and when I saw the man, two days after the occurrence of the hernia, I found the belly greatly swollen, tympanitic, with marked tenderness from the umbilicus down to the inguinal canal on the right side. He was vomiting a dirty greenish-looking fluid, with distinctly fecal odor. The pulse and temperature were about normal. I invaginated the scrotum with my finger, carrying it well up into the inguinal canal, but was unable to feel the hernia there, though just above Poupart's ligament, and just under the internal ring, there remained a small induration, indistinctly felt by the reason of distention of the abdomen. I concluded that the hernia had either been reduced in its sac, or else that both had been well pressed up the inguinal canal, and between the peritoneum and wall proper. An operation was at once decided upon. An incision, three inches long, was made over the site of the appendix. At least a pint of blood-stained water escaped from the peritoneal cavity. Inserting my two fingers, I detected a constriction at the internal ring, and succeeded in drawing out eight inches of intestines. This I brought through the abdominal wound to the outer surface of the abdomen. The bowel was so congested at each extremity of the eight inches, where the encircling band had constricted it, that the peritoneum had given way, and gangrene was imminent. I immediately cut out ten inches of intestine, and made an end-to-end approximation by means of Murphy's button. All hemorrhage was arrested, the abdomen cleansed, and a drainage-tube so placed as to reach the bottom of the pelvis. The wound was closed with silk sutures, and the patient taken off the table with a pulse of 80. The reaction that night was pronounced, the temperature reaching 103°, but it fell promptly by morning to 99½°. The pulse from that time on did not go above 86, and the temperature ranged under 100°. Fifteen grains of calomel were given the night after the operation; ten grains more on the next day, and by means of oft-repeated large enemas the intestinal canal, at the end of sixty hours, was thoroughly emptied of all gas and fecal matter. The patient's general condition was good all of the ime after the operation, and he expressed himself ready at any time to get out of bed and go to work. His appetite remained good, and he is eating ordinary food. The drainage-tube was removed on the third day. The button was passed at the end of the seventh day. Thirty-two days have now elapsed, and his bowels are acting every day without medicine.

(The patient was presented for examination by the Fellows of the Association.)

CASE II. *Distended gall-bladder; cholecyst-enterostomy by Murphy's button.*—C. E., fifty-three years of age, of sedentary habits, had suffered more or less with dyspepsia for years. Six months before consultation he became very much jaundiced, and the liver was greatly enlarged. He had no fever; the pulse was feeble, 60 beats per minute. The man was emaciated to almost the last degree. There was great pain over the pyloric region, with tenderness all along the liver, which projected in a uniform line three inches and a half below the border of the ribs. At the anterior axillary line there was a distinct projection downward from the liver, reaching the anterior superior spinous process of the ilium. The case had been diagnosticated by several physicians as one of carcinoma of the liver. While the symptoms pointed strongly to such a condition, I was not willing to consent to the diagnosis without an operation. This growth had been rapid, and had even *overreached* the rapidity of growth characteristic of malignancy. I detected what I thought to be the rounded end of the gall-bladder projecting at the lowest point of the enlarged liver. An incision was made 2½ inches below the anterior extremity of the ninth rib, extending downward three inches. Upon entering the abdomen I found the liver greatly enlarged and very much congested. It was blue, and projecting at its lowest point was the gall-bladder. I succeeded in bringing the fundus of the gall-bladder in the incision, and opening it, evacuating fourteen ounces of bile. With a probe introduced into the gall-bladder, and my two fingers in the abdominal cavity, I was enabled to follow the cystic duct to the common duct, but no further. I examined with my two fingers the under surface of the liver, and found no signs of malignant disease. I tested the common duct to the duodenum, and could find neither gall-stone nor malignant growth, but the liver was so swollen that a stone in the common duct might easily have escaped touch.

The condition of the patient at this time admonished a rapid completion of the operation, so that I did not attempt a cholecyst-enterostomy, but sutured the gall-bladder to the anterior wall of the abdomen, hoping that with the use of liberal douches of hot water I might succeed in clearing out the common duct. The patient reacted slowly after the operation, but in a few days was out of all danger. The hot-water douching was tried, and every effort made to pass a probe along the common duct, but without success.

At the end of three weeks there was some gain in strength, the appetite was good, and the color had become nearly natural. The liver had receded beneath the ribs. In this state I allowed the man to return to his home to recuperate before undertaking a cholecyst-enterostomy.

The patient returned after three weeks, with the general condition slightly improved, but the absence of bile from his bowel seemed to have prevented his gaining in flesh. The prospect of improvement in the absence of bile was so unpromising that, although his condition was bad, in consultation it was deemed advisable to connect the gall-bladder and the bowel.

At the time of this operation I again explored the tract of the common duct, and felt two distinct enlargements, believed to be calculi. This case was not one for waste of time in efforts at removal of calculi from the common duct, so I hastily performed the cholecyst enterostomy, using the Murphy button. The case progressed favorably, the button coming away from the fistula in the abdomen on the seventh day. We had much trouble in keeping the food from escaping *via* the gall-bladder. Most of the bile passed into the bowel. The condition of the man for ten days was precarious indeed, but slowly improved, and he went to his home at the end of four weeks. There he gained about fifteen pounds in flesh, and was slowly but steadily improving until three months after the operation, when he was taken with diarrhea, soon becoming dysenteric, and died on the third day.

The operation, however, of gastro-enterostomy with the Murphy button proved entirely satisfactory, and so far as an operation was concerned is to be regarded as a success in this case.

CASE III. *Acute appendicitis.*—J. M., twenty-six years of age, a white male, was brought to my infirmary by Dr. Carmack, of Iuka, Miss., three days after the onset of an attack of acute appendicitis, which was marked by the usual symptoms. He had a pulse of 80, and a temperature of 100°; the abdomen was rather full, and a distinct lump could be felt at the site of the appendix, where there was a marked degree of sensitiveness to pressure; the bowels were acting well under cathartics. I made the usual incision, and found the head of the colon and a coil of intestine strongly bound together and to the wall of the pelvis, by inflammatory adhesions. These adhesions were quite strong for their age, and great care was necessary in separating them. They were all liberated and the appendix found tightly bound to the

colon, very much swollen and inflamed. It was tied and removed, and the wound packed lightly with gauze. The patient ten weeks after the operation was attending his duties as salesman.

CASE IV. *Empyema of the gall-bladder; cholecystotomy; forty-five calculi removed.*—Mrs. W., forty-three years of age, white, was seen in consultation with Dr. Lipscomb forty-eight hours after she was taken sick. She was suddenly seized with a pain, which she described as a cord around the base of her chest. There was great difficulty in breathing, and the pain extended down the right half of the abdomen, toward the pelvis. It was the time of her menses, but the flow after two days ceased abruptly five hours before she was taken sick, and this checking of the menses was naturally looked upon as playing a prominent part in the causation of this pain. She vomited a quantity of bile. The pulse was 80, and the temperature normal. An opiate was administered, followed at once by a full dose of calomel, and in two hours the patient had two large typical bilious actions, but her pain and vomiting of bile continued, while the tenderness in the region of the appendix increased. At the time of my first visit I found her with a temperature of 101.5°, the pulse 100; McBurney's point of tenderness was very pronounced; in fact the symptoms pointed quite strongly to a case of appendicitis. There was a distinct tumor, the size of the first, extending upward and outward from McBurney's point. It could be felt, but could not be handled, owing to the pain; I succeeded, however, in detecting some mobility of this mass and traced its outline upward toward the liver. While the symptoms pointed strongly toward appendicitis, and tenderness at McBurney's point was most pronounced, there were some things that led me to suspect a distended gall-bladder. First, the size of the tumor was too great to have been attained in forty-eight hours from appendicitis; secondly, an appendicitis producing a tumor or mass of adherent intestines of the size in this case, would have been accompanied by such a degree of inflammation surrounding the mass as would have bound this down and prevented any motion laterally; and lastly, the fact of the two actions of the bowel after the pain had begun so severely, together with this excessive vomiting of bile—all, I say, led me to doubt the existence of appendicitis and rather to attribute the enlargement to distention of the gall-bladder. The previous history told of numerous attacks of colic from five to eight years back, although in the past three years she had had no trouble of that kind. An operation was decided upon for the relief of whatever the trouble might be.

The patient was removed to my infirmary, and being placed under an anesthetic preparatory to the operation, the tumor could be mapped out as rising and falling with the diaphragm, could be traced upward, and could be moved laterally through a space of two inches. I was now confident that the case was one of acute empyema of the gall-bladder and I made the incision accordingly. The gall-bladder was found very much inflamed, and holding eight ounces of purulent matter, which was drawn off with an aspirator. A soft flat sponge was used to protect the cavity and an incision was made in the gall-bladder, and with a scoop and forceps I removed forty-five gall-stones, one the size of a filbert, the rest much smaller. There still remained one stone that blocked up the cystic duct. After considerable manipulation with the fingers in the abdomen and the forceps in the gall-bladder, I succeeded in crushing the stone and washing it out. The fundus of the gall-bladder was of a blue-black color and tore readily, and showed all evidences of approaching gangrene. The gangrenous point corresponded to the tender spot of McBurney on the abdomen. I removed the fundus of the bladder as far up as necessary and stitched the margins of the opening to the abdominal wall, making a biliary fistula The patient was put to bed in about the same condition she was in when placed on the table. She came from under the anesthetic complaining of great pain, thirst, and nausea. The abdomen was distended. In a few hours the pulse went up to 110, and the temperature to 101°. There was constant eructation of gas and some vomiting. The indications were clear that the bowels should be moved at once. Enemata, and calomel and soda by the mouth, were used freely. At the end of twenty-four hours her pulse was 150, respirations 8, and the pupils contracted to a pin-point; there were frequent retchings and belching, the abdomen greatly distended, and the condition a forlorn one. Having tried salts and calomel I now resorted to drop doses of croton-oil. The woman was twelve hours in this condition before we succeeded in getting the bowels moved. They acted seven times, when to our great satisfaction the patient had a pulse of 90, a temperature of 100°, respirations of 16, with the mind clear, and clamoring for some nourishment. Milk was cautiously administered once every hour, and the patient went on rapidly to recovery. There remains a fistula at the end of twelve weeks, but this is progressively contracting, and there is every evidence that bile is reaching the intestinal canal.

This case presented a number of interesting points in diagnosis, and after operation showed that in a few hours more the case would have been a hopeless one. Attention should be called to the absence of jaundice at this time; nor had she ever been so affected; this argues that the common duct had never been obstructed.

CASE V. *Acute recurring appendicitis.*—L. S., a male, thirty-six years of age, had a history of a severe attack of appendicitis three years before, and since that time a continued sense of uneasiness in the parts, and especially a sense of tension in the iliac region when standing erect. He was brought to my infirmary with a temperature of 102°, a pulse of 100, andwith a history of an acute attack of five days' standing. A slight tumor was detected upon palpation. The bowels had been thoroughly acted upon, so that an operation was performed at once. The abdominal cavity was opened over the appendix, which was found lying behind the cecum, and closely attached to it, as well as to the abdominal wall, by old adhesions. Circumscribed peritonitis was plainly evident over the cecum and adjacent intestines. The appendix was separated from the adhesions and removed. This patient recovered without any untoward symptoms, and in eight weeks resumed his usual vocation. The appendix was enlarged and thickened and showed evidences of chronic inflammation, though no ulcer or evidence of ulceration could be discerned. It contained muco-purulent matter. (*Dr. Winston.*)

CASE VI. *Empyema of the gall-bladder; three gall-stones removed.*—Mrs. C., thirty-two years of age, had a previous history of repeated attacks of gall-stone colic, the true nature of which attacks seemed never to have been suspected. She was brought to my infirmary suffering from a typical attack of gall-stone colic, with a tumor corresponding to a distended gall-bladder and which extended downward about four and one-half inches below the ribs. She was jaundiced and the abdomen was swollen and tender. The temperature was 102°, the pulse 100. Obstruction from gall-stones was evident, and I opened the abdomen through a vertical incision over the gall-bladder. I removed three stones, together with six ounces of bile mixed with pus. The gall-bladder was stitched to the anterior wall of the abdomen and gauze drainage arranged. The patient made an uninterrupted recovery. Within two months the fistula had healed and the patient was in perfect health. (*Dr. J. W. Gray.*)

CASE VII. *Carcinoma of the cecum.*—N. A. J., thirty-one years of age, male, white, much emaciated, with a pulse of

120, a temperature of 100.5°, appetite fairly good, bowels tending to diarrhea, was brought to my infirmary by Dr. Gladney. The patient had had an excellent physique and enjoyed the best of health until within six months, during which time there had been progressive and rapid loss of flesh to the extent of sixty-five lbs. In the right iliac fossa there was an indurated mass that had led to a suspicion of appendicitis. The enlargement corresponded in location to an adherent mass of the bowel, such as is frequently seen in appendicitis, but it was movable in each direction, and did not seem to be as closely bound to the posterior wall as is the case when the mass is formed by adherent coils of the intestine. It also felt hard and nodular. I expressed the opinion that the tumor was malignant, but inasmuch as there was some room for doubt an exploratory operation was performed. A three-inch incision through the abdominal parietes just over the tumor revealed a growth in the wall of the cecum. It was very hard and included at least six inches of the bowel. The mesenteric glands so far as they could be examined were enlarged and hardened. The great omentum was attached to the growth, and in this omentum a chain of enlarged lymphatic glands was plainly detected. The suspicion of malignancy being confirmed, and being satisfied that no benefit could be derived from an enterectomy, I removed about four inches of the omentum, including several lymphatic glands, each about the size of a filbert. The operation having been thoroughly aseptic in every detail, the wound closed, and on the tenth day the patient was taken to his home in the country apparently in better condition than he was on arrival here. A microscopic examination of the mesenteric glands proved the growth to be carcinomatous.

CASE VIII. *Chronic recurring appendicitis with perforations.*—C. McL., a male, thirty-seven years of age, with a history of repeated attacks of appendicitis, acute in character, reached my infirmary with a temperature of 103° and a pulse of 110. His general condition was very bad, the bowels being locked. (Six months before he had declined an operation which I had urged upon him during one of his attacks.) At this time, twelve days after the attack began, I found a tumor at the site of the appendix. The symptoms of general peritonitis were very prominent. There was doubt as to whether there might not be a general suppurative peritonitis. He was placed upon the table and the abdomen opened over the appendix. The intestines were found highly inflamed. There was a mass of adherent bowel just under the incision. Before separating the adhesions the field was walled off by sponges, and the coils of intestine were carefully separated, allowing two ounces of pus, with small particles of fecal matter, to escape on the sponges. The appendix was not sought for, but the wound was packed with gauze, and the patient recovered without any complicating symptoms. This was a case of perforative appendicitis, and although the patient recovered from this operation, I think it can be safely argued that he would have run much less risk if he had accepted the operation when proposed six months before, when there was probably no pus present. (*Dr. Rudisell.*)

CASE IX. *Abscess behind the cecum.*—J. L. H., male, white, thirty-four years of age, had been sick three months with typho-malarial fever, during the course of which an enlargement formed within the abdomen at the site of the appendix. In the course of time, coincidently with the subsidence of this enlargement, he passed from his bowel about a pint of pus. The diagnosis of appendicitis was offered and the patient brought to my infirmary. His pulse was 120, the temperature 100.5°, appetite absolutely wanting, prostration profound —making in fact a perfect picture of a man after an attack of typhoid fever. There was still a tumor at the site of the appendix, which was tender on pressure. After watching him and trying to build him up for ten days without being able to chronicle any success in the treatment, the abdomen was opened by an incision over the tumor. The appendix was found normal, but behind the peritoneum and behind the head of the colon could be distinctly felt a more or less fluctuating mass. The incision already made was carefully protected by sponges while another incision was made just above the outer portion of Poupart's ligament and the peritoneum carefully raised and followed up to behind the cecum, when the pus-cavity was opened and a teacupful of thick, yellow, curdy matter escaped. The probe detected the crest of the ilium and sacro-iliac junction to be eroded. The wound was packed with gauze, and the patient made a slow recovery without any symptoms of peritonitis, and in two months he was able to sit up, and eight months after the operation he had gained sixty pounds and was enjoying perfect health.

CASE X. *Incarcerated umbilical hernia.*—Mrs. T., forty-two years of age, the mother of a number of children, was referred by Dr. Crofford for incarcerated umbilical hernia. There was a hernial mass about the size of a child's fist, which was very painful upon manipulation and had been in existence for years. During the earlier days of its existence the woman had oftentimes reduced the hernia by gentle pressure, but for five or six years past she had been unable to reduce the size of the enlargement by any amount of pressure. The patient had a very large abdomen. She was admitted to my infirmary, and after a week's preparatory treatment I made an elliptic incision over the hernial mass, opened the sac, and after considerable difficulty succeeded in separating the adhesions between the sac and the hernia, which proved to be omental. I then cut away the excess of tissue in the abdominal wall, and closed the wound with silk sutures. Her recovery was not marked by any symptoms worthy of mention. She went home at the end of six weeks wearing a close-fitting abdominal bandage.

CASE XI. *Acute perforative appendicitis.*—J. H., male, white, thirty-eight years of age, presented himself about the tenth day after the onset of an acute attack of perforative appendicitis. His condition was exceedingly bad, so that I liberated six ounces of pus by Willard Parker's incision, and then thoroughly washed out the pus-sac. It was found that there were two fistulous tracts, one extending to the bottom of the pelvis, another leading to the site of the appendix. After four weeks' irrigation and drainage of these sinuses, the man was suddenly taken with fever, a temperature of 104°, and a pulse-rate of 140. There was obstinate constipation, general peritoneal pains, and so serious an aspect that it was deemed advisable to perform celiotomy in search of pus. The abdomen was opened just internal to the old incision and the fistulous tract followed down to the floor of the pelvis, several ounces of pent-up pus being liberated. The upper arm of the fistula was then drained and the remains of the appendix removed. The intestines all this time were kept back and walled off from infection by sponges. A glass drainage-tube was used, and for five days the patient's condition was very critical; at the end of this time, however, his bowels moved freely. His recovery was slow and the fistula remained for several months, but the last report was that it had nearly healed. No cause for the bowel-obstruction could be found other than peritonitis due to pent-up pus in the lower end of this fistula. Although a suppurating tract was made continuous with the peritoneal cavity, we succeeded in preventing general peritoneal infection.

CASE XII. *Herniotomy for strangulated inguinal hernia: the operation completed with view to radical cure.*—J. B., a male, forty-three years of age, was brought to my infirmary in November, 1892, by Dr. McDowell, of

Mississippi. The patient walked from the railway depot to the infirmary, although in great pain from a hernial protusion in the inguinal region. The mass was not large, but extended just into the scrotum; it had been down about forty hours, and was quite tender to touch. The patient's pulse was 90, and his temperature 100°. All signs of hernia were present, and, after administering the anesthetic, and with gentle taxis having failed to reduce the hernia, I performed herniotomy. I found an old hernial sac which contained a loop of intestine very much discolored, but its peritoneal covering had not lost its luster. The inguinal canal was laid open, the bowel returned to the abdomen, and the McBurney operation for the radical cure of hernia carried out in detail. The patient's bowels moved that night, and the only trouble was in keeping him confined to bed during the eight weeks he remained with me. The operation has thus far (eleven months) proved a cure. The man is a farmer, and is doing his work as usual. This was a case in which prolonged efforts at taxis had failed, and at the time I saw it taxis was dangerous.

Case XIII. *Perforative appendicitis.*—J. D. S., male, white, thirty-eight years of age, presented a history very much like that of Case X. There had been an attack of peritonitis and a large collection of pus in the right iliac fossa. The fossa I opened by an incision just above the outer part of Poupart's ligament. The sac being washed out I could pass a probe upward and backward nine inches, following the posterior wall of the abdomen, as nearly as I could estimate it, almost to the pancreas. The liberation of this pus was followed by a rapid improvement in health, but the fistula still remained, and about every four weeks an accumulation of pus at the upper end of the fistula would give rise to grave systemic symptoms, with a temperature of 103°, a pulse of 140, and acute diarrhea. Every effort was made to ward off these attacks and keep the fistula well drained, but without effect. I was not able to say what was the first cause of the formation of pus; I am strongly of the belief that it was appendicitis, and that the pus burrowed upward and backward toward the diaphragm. Five months ago, during the height of one of the attacks of peritonitis caused by retention of pus, while his temperature was 103°, I opened the abdomen by an incision four inches in length just external to the right linea semilunaris. When the cavity was reached we found a collection of pus lying on the posterior wall of the abdomen behind the peritoneum, consequently behind the ascending colon. The intestines were walled off and the sinus followed for a distance of six inches. The fluid that escaped was of a dirty-brown color, purulent in character, and exceedingly offensive. The sac was thoroughly irrigated and packed with gauze. The patient's temperature fell rapidly, and the next day he was apparently well. His bowels moved regularly. All abdominal symptoms disappeared, the wound did well, and he gradually regained strength, and a few weeks ago resumed his work as an accountant.

Case XIV. *Chronic appendicitis; abnormally located kidney complicating the diagnosis.*—J. C., male, white, twenty-three of age, was brought to me by Dr. Mayfield. There was a history of bowel-trouble with a distinct tumor in the region of the appendix, which was very tender on pressure. His temperature was 102°, his pulse 100. He was very anemic, and had lost much flesh. The history of the case showed that there had been an acute attack of inflammation at the head of the colon, with the discharge of a quantity of pus by the rectum, and varying degrees of poor health extending over the six months past. There were some points about the feeling of this tumor at the site of the appendix that made one hesitate in pronouncing it an inflammatory mass; however, an exploratory operation was decided upon. The incision was made over the site of the appendix. The tumor was found to be a misplaced kidney, lying one-half within and one-half without the true pelvis. It was apparently healthy. The appendix itself showed slight inflammation of the peritoneal surface. Its walls were thickened and hardened; its general contour irregular and bulging at points. Its extremity was greatly enlarged, and upon removal was found to contain pus. Gauze drainage was used in this case. After ten days the fever had ceased, but there was a very slow recovery. The man is to-day, ten months afterward, in good health. This was another case of the catarrhal form of appendicitis complicated in diagnosis by the presence of an abnormally located kidney.

Case XV. *Acute perforative appendicitis.*—E. F. T., thirty-seven years of age, male, white, presented the characteristics of an acute perforative appendicitis. The attack came on without warning and without any previous attacks, the man having retired the night before, as he believed, in excellent health. I saw him with a pulse of 120 and a temperature of 102° sixty hours after the attack began. There was general abdominal tenderness, with the McBurney point especially well marked. The man was removed at once to the infirmary and the abdomen opened at the site of the appendix. The small intestine and head of colon were matted together by inflammatory adhesions. These were carefully separated, liberating about two ounces of pus with an admixture of fecal matter. The appendix was perforated at its base by an ulcer which included three-quarters of its circumference. Plainly speaking, a slough had occurred in the appendix near the base and the remaining portion was bordering on gangrene. Great care was taken to prevent contamination of the unaffected peritoneum. The appendix was ligated, removed, and the abdomen then thoroughly flushed with hot water. In this case gauze drainage was relied on, and the patient made a rapid and complete recovery. This was a case of perforative, or what we might almost term a gangrenous form of appendicitis, a case in which a very few more hours' delay would have allowed the case to get beyond the reach of surgical aid.

Case XVI. *Chronic appendicitis, producing relapsing dysentery.*—J. G., male, twenty-four years of age, had a history of six months' illness and a loss of thirty pounds in weight. During the illness all of his symptoms pertained to the bowels. It was a case of relapsing dysentery. He was removed to the infirmary with a temperature of 103°, and a pulse of 102. All of his pain was complained of on the *left* side of the abdomen near the iliac crest. Careful palpation detected a small tumor at the site of the appendix, on pressing which pain was produced on the *opposite* side. The usual incision for removing the appendix was made. The appendix, six and one-half inches in length, was found closely attached to the external and posterior aspect of the cecum. It was necessary to tie off its mesentery with five ligatures. The appendix was then ligated and removed. The head of the colon was found greatly inflamed, and the glands in the meso-colon and mesentery adjacent to the appendix were as large as chestnuts. Gauze drainage was employed in this case. The patient recovered without any symptoms complicating his case. At the end of two weeks he was able to sit up. On section, the appendix was found greatly thickened. There were no well-defined ulcers to be detected on its inner surface, though it contained a small quantity of pus. From the appearance of the head of the colon there was no question but that there were numerous ulcers throughout that part of the bowel.

Case XVII. *Chronic relapsing appendicitis.*—J. M., thirty-seven years of age, male, white, had been in poor health for a year and a half, with repeated attacks of bowel-trouble, accompanied by fever and other evidences of peritonitis; on several occasions his condition had

been quite critical. The diagnosis of chronic appendicitis was made, although no tumor could be felt. The operation was performed at the onset of a well-pronounced attack. The appendix, greatly enlarged, its walls greatly thickened, was found lying within the true pelvis, attached to the posterior wall on the right side, and completely cornered by an adherent coil of small intestine. Localized peritonitis existed, but there was no evidence of a perforation ever having taken place. The appendix was freed from all adhesions (by a ligature applied close to its base), and removed, the ligature being cut short. Although there was no pus seen in connection with the operation, it was deemed safest to employ gauze drainage. The man made an excellent recovery and has since enjoyed perfect health. The appendix in this case, upon section, showed five superficial ulcers on its mucous aspect. These ulcers did not extend through the mucous membrane. The case should properly be classed as one of catarrhal appendicitis, in which adhesions had taken place during some previous acute exacerbations, and continued to give rise to the trouble in the peritoneum.

CASE XVIII. *Empyema of the gall-bladder; one gall-stone.*—Mrs. P., fifty-eight years of age, with repeated attacks of colic during the period of seven years, was very much emaciated, with marked jaundice, dyspeptic, presented a tumor corresponding in outline and symptoms to an enlarged gall-bladder. Her condition was then fairly good, but she declined an operation for gall-stones, and after repeated doses of sweet-oil the tumor greatly subsided, though no gall-stones passed. In spite of all my entreaties to undergo the operation, she declined, and went home. She returned two months later with a small tumor at the site of the gall-bladder, with a temperature of 104°, a pulse of 130, completely prostrated, and with a history of a very severe chill every day for a week. Her condition was not such as would warrant an operation with any hope of recovery. I opposed an operation in her then exhausted condition. I did not believe there was any malaria in these daily chills; nevertheless I gave her quinin for forty-eight hours with a return of the chills at the end of each twenty-four hours. She came for the operation of cholelithotomy. I explained to her and the family what little hope there was of her surviving the operation, but they still insisted on giving her the chance, however slender that might be. I did not desire to shirk any responsibility, and knowing that the patient would die without the operation, and that operation was the only chance, I yielded to their solicitations, opened the gall-bladder and removed the stone. The peritoneum was highly inflamed as far as could be examined. The patient survived the operation only twenty-four hours, during which time she reacted well, was thoroughly conscious, and took nourishment freely. Her pulse and temperature both led us to hope she was improving, but she suddenly grew worse at the time for her daily chill, and passed away.

CASE XIX. *Enterectomy; lateral anastomosis.*—Mrs. B., twenty-four years of age, white, came to my infirmary in the last stages of what proved to be tuberculosis of the intestine. I had seen her two years before, after she had had a slight pulmonary hemorrhage. Careful stethoscopic examination had failed to locate any tuberculous patch. I had advised her to seek a climate better suited to one threatened with tuberculosis. One year ago I saw her in an attack of dysentery, which was controlled after several days of treatment by the usual remedies, calomel, opium, and ipecac. On the occasion of my last visit I left her with the promise from her that she would let me see her again in a few weeks to examine the site of the vermiform appendix, which location had during this spell been the site of most of her pain. A year elapsed before I saw her, which was on the occasion of her being brought to my infirmary, the mere shadow of a woman. There was a distinct enlargement at the head of the colon. She had had a long spell of dysenteric diarrhea, and had been in bed four months with fever, sweats, and rigors. Her physician had strongly suspected appendicitis, and had advised operative treatment. In consultation with Dr. Henning, her physician, I could not advise surgical interference, from the fact that the patient's condition did not promise that she would survive the operation. She and the family, however, pleaded so strongly that something should be done that I finally consented to an exploration, with the hope that the trouble was appendicitis. Upon opening the abdomen we found adhesions between the great omentum and the small intestine at the head of the colon. In separating these adhesions ever so carefully four or five holes were torn into the cecum; I could then make out about four inches of the cecum and two inches of the small intestine to be greatly thickened, and from the numerous small nodular patches on the outer surface my diagnosis was tuberculosis of the bowel. The patient's condition was desperate, but with the torn bowel, and with her request that "we should do something, remove everything in sight," I performed enterectomy, removing about four inches of the small intestine and six inches of the colon. A lateral enterocolostomy by means of Senn's plates was done. The general cavity was during the operation protected from infection by sponges. The patient put to bed, but I hardly expected her to live more than a few hours. Contrary to all expectations she lived four days and a half. Her bowels acted voluntarily three times after the second day. The gauze dressings on being taken off showed a slight fecal fistula. There was no evidence of acute peritonitis excited by the operation, though I doubt whether the patient had sufficient vitality for such a condition to be kindled up. She died from the original condition for which the operation was done, and not from the operation.

CASE XX. *Cyst of the broad ligament; pyosalpinx.*—Mrs. L., thirty-seven years of age, white, had been in poor general health, and had had fever, with much prostration. On the left side of the uterus there was a tumor the size of an infant's head. The tumor was painless, but by its presence pressed the womb against the right wall of the pelvis, where on bimanual exploration the symptoms pointed strongly to salpingitis. After five or six days of preparatory treatment celiotomy was performed, and the tumor, which proved to be a cyst of broad ligament, was removed. Both tubes and ovaries were removed, because on the right side there proved to be pyosalpinx. The operation was completed rapidly; a glass drainage-tube was employed because of much oozing, due to the separation of the adhesions on the right side. This patient did badly. Her pulse when she was taken from the table was 84, but rose steadily until the third day, when it was 140, with other symptoms of traumatic peritonitis. She died at the end of the fifth day.

CASE XXI. *Chronic appendicitis.*—Miss B., thirty-one years of age, had the following history: Seven months ago she had an attack of appendicitis, in which there was a formation of pus, which was evacuated by an incision two inches behind the anterior superior spinous process just over the crest of the ilium. She improved a good deal, but was not well, and after the end of four months had another slight attack, though no pus seemed to have formed; two months later, and one month before coming to me, there was a return of the pain in the iliac region of the right side, with fever, quick pulse, loose bowels, and much prostration. This condition continued until I saw her, when I diagnosticated appendicitis, based upon the tenderness over the appendix-site. The remaining portion of the abdomen could be palpated without causing complaint. Her pulse was 90, and the even-

ing temperature about 100°. The abdomen was opened over the appendix, which was found rather behind the head of the colon to which it was adherent, as well as the iliac fossa. The distal end was found attached to the wall of the abdomen at the crest of the ilium, corresponding to a cicatrix seen on the skin where the pus had been evacuated five months before. With my finger I succeeded in enucleating the end of the appendix from this iliac attachment, and separating it from its other adhesions I tied it off. Gauze drainage was used, and the patient was put to bed in excellent condition. The usual nausea of the anesthetic did not wear off, but continued through thirty-six hours. The pulse ranged from 70 to 80, the temperature from 98.5° to 100°. At the end of forty-eight hours the bowels were moved by enema, and salts acted a few hours later. There was no abdominal tenderness, no distention. The bowels continued to act freely from that time on; nor did any symptoms of peritonitis present themselves. On the third day after the operation the kidneys suddenly ceased to secrete urine, and for forty-one hours not one drop entered the bladder; then there were a few drams secreted, gradually increasing in the next four days at the rate of thirty-two drams in twenty-four hours. The urine was hemorrhagic, and contained both pus and tube-casts. The woman died of uremia on the tenth day, without one untoward symptom referable to the abdomen. Chloroform was the anesthetic used. The time of operation was thirty minutes; the room was carefully watched, and there was no exposure to cold. The urine had been carefully examined and found normal three weeks before the operation.

THE SYSTEMATIC QUALITATIVE ANALYSIS OF THE CONTENTS OF THE STOMACH.

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The accompanying tables are presented, not as containing anything new in the department of gastric chemistry, but with the hope that they may facilitate systematic investigation. The preliminary step in the study of gastric digestion is the administration of a test-meal. In making a series of examinations in a given case, it is well to vary the bill of fare, but the typical test-meal that will be found most generally available is the following: A tender chop or beefsteak, well broiled but not dried; a slice of home-made bread, two or three days old, with butter; a glassful of water. This meal contains albuminoids, hydrated starches, and fatty hydrocarbons. The exact amount eaten is not important; in fact it is best to let each patient take what he would consider an average light meal. From an hour to an hour and a half after eating, from fifty to a hundred cubic centimeters of the stomach-contents should be removed through a tube, undiluted if possible, filtered through absorbent cotton or filter-paper, and the tests should be applied to the clear liquid thus obtained. To prevent further digestion outside the body, the liquid should be kept cold; in fact it is best to examine it immediately.

The reaction is determined by litmus paper. A marked alkaline reaction is scarcely possible under ordinary circumstances. It would be expected after a copious hemorrhage into the stomach, or if much bile had entered through the pylorus. The reaction of the resting stomach several hours after a meal is neutral or nearly so. In examining under the conditions assumed, an hour or an hour and a half after the test-meal, the reaction will almost invariably be found acid. The acidity may be due to hydrochloric, lactic, acetic, or butyric acid, or to acid lactates or phosphates. Many aniline dyes change color with free acids, but not with acid salts. The behavior of methyl-violet, Congo-red, and tropeolin 00, with various acids, is given in a separate table. In the absence of the color-change we may certainly argue the lack of the normal hydrochloric acid of the gastric juice, which should be present in its greatest proportion about one hour and a half after the meal. The other acids mentioned represent respectively the chemic decomposition of albuminoids (especially of milk-foods), carbohydrates, and fats. If these acids persist an hour or more after the test-meal we may suspect them to be due to fermentation, and should then examine the gastric contents microscopically for bacteria and fungi, these being normally destroyed or held in check by the antiseptic power of hydrochloric acid. It is rare that the acidity of the stomach-contents at the time of the examination is due to acid salts alone, for the absence of hydrochloric acid favors the formation of one or more of the organic acids.

It will be noted that we have two quite dissimilar solutions that give the same test with hydrochloric acid. The same reaction occurs with other mineral acids which cannot be present in the stomach except by medication. The resorcin-solution is more stable than the solution of phloroglucin-vanillin, but not quite so sensitive. However, either will indicate the presence of one part of hydrochloric acid in twenty thousand (about one-tenth the normal proportion).

Lactic acids and lactates give the same reaction with ferric chlorid, but fortunately both have the same significance. The strictly chemic tests for acetic and butyric acids are inconvenient, and the odors are sufficiently characteristic.

Carbohydrates are converted into glucose by the ptyalin of the saliva, and by the amylopsin of the the pancreatic juice, the former acting on cooked starches, the latter on all carbohydrates. The test-meal contains only cooked starch in moderate amount, and, as the absorption of glucose is normally rapid, the carbohydrates should have disappeared entirely in an hour or an hour and a half after the meal. In case large quantities of starchy food, or even small amounts of raw starch, have been taken, the iodin-test will be found later—in

ACTION OF ACID AND OTHER SOLUTIONS ON ANILINE DYES.

Solution.	Methyl-violet.	Congo-red.	Tropeolin 0 0.	Aniline-orange.
HCl	Yellowish-brown, yellow, green, blue as strength of acid is decreased.	Blue.	Magenta.	No change.
$HC_2H_3O_2$ . . .	Blue with purple tint.	"	No change.	
Butyric acid .	Blue.	Dirty purplish-blue.	" "	
Lactic acid . .	"	Blue.	Similar to HCl, but less marked.	
HNO_3	Same as HCl.	Same as HCl.	Same as HCl.	
H_2SO_4				
$H_2C_2O_4$	Blue.	Blue.	Suggestion of pink.	
HI	Blue with slight purple tint.	"	No change.	
Picro-nitric ac	" " " " "	Brownish.	" "	
C_6H_5OH . . .	Blue transparency, unchanged reflection.	Slight change of shade.	Slightly lighter shade.	Not tried.
H_3BO_3	No change.	Blue.	No change.	
Tannic acid .	" "	Slight brownish shade.	" "	
NaCl neutral .	" "	Not tried.	Not tried.	
Fresh urine . .	" "			

the latter event until the stomach has completely emptied itself.

Chemists are unanimous in condemning the reduction-test for glucose as inaccurate in the presence of albumin. For clinical purposes this objection does not seem to hold good. Simply for the sake of economizing time, it is well to add the stomach-contents in a layer above the copper solution. The formation of a reddish-violet ring in the cold indicates the presence of propeptone or peptone. The tube may then be heated in order to test for sugar.

STOMACH-CONTENTS.

Reaction

Alkaline.	Abnormal.
Neutral.	Digestion complete, several hours after meal.
Acid, free.	Color change with aniline dyes.
" salts.	Color not changed.

HCl.

R.—Resorcini	5	or	R.—Phloroglucin	2
Sacchari albi	3		Vanillin	1
Aquam ad	100		Alcohol	30

Add 5 drops of reagent to 3 of stomach-contents. Evaporate in porcelain capsule. Crimson tint at drying edge = free HCl. Maximum ½–1 hour after meal.

Lactic acid. lactates.

R.—Tr. ferri chlor.	. .	0.10	Amethyst solution.
Ac. carbolici	. . .	0.40	
Aquam	. . . ad	10 00	

Add stomach-contents guttatim to 1 cm. of reagent in test-tube. Yellow color = lactic acid or lactates. Abnormal after 1 hour after meal.

Acetic acid. Odor of vinegar.
Butyric acid. " " rancid butter.
} Abnormal after 1 hour after meal.

Carbohydrates.

Starch. $C_6H_{10}O_5$

R.—I	. . . . .		1
KI	. . . . .		10
H_2O	. . . .	ad	200

Add 1 drop to filtered stomach-contents. Violet to blackish-blue color = starch. Abnormal after 1 hour after meal if test-meal contains only cooked starch. Raw starch normally present in unfiltered stomach-contents several hours after meal.

Sugar. $C_6H_{12}O_6$

R.—Cupri sulph.	. . .		10
Glycerini	. .	ad	100

Add gtt. ij to ½ c.c. of liquor potassæ. Shake till a uniform deep blue is produced.

Add in ring above reagent in test-tube a few drops of stomach-contents. Reddish-violet band in cold = propeptone or peptone. See below.

Heat. Reddish-yellow ppt. = sugar. Abnormal after 1 hour after meal.

Albuminoids.

Filtered stomach-contents + heat. Ppt = albumin or syntonin. Abnormal after 1 hour after meal. Filter to remove all traces of albumin and syntonin.

Filtrate No. 2 in ring above cold HNO_3. Ppt. = propeptone. Filtrate No. 3 removed by pipet.

Filtrate No. 3 + tannic-acid solution. Ppt. = peptone. Peptone should be in excess of propeptone, 1 hour after meal.

The tests here selected for albuminoids must be followed in order, or incorrect results will be reached. It will be noted that the same approximate limit of an hour is adopted for the completion of the preliminary stage of digestion. Albumin and syntonin should not be found much, if at all, after this period. Boas has demonstrated that propeptone is absent in the digestion of meat, but present in the digestion of plant-albumin and egg-albumin. Most of the proteid food in the test-meal is derived from meat, a little from wheat, and hence we must expect to find a very moderate amount of propeptone and a considerable precipitate in the final treatment with the tannic-acid solution. For convenience, the liquid designated "Filtrate No. 3," is removed by the pipet from above the ring of precipitated propeptone, instead of by ordinary filtration.

All the intricacies of gastric chemic analysis have manifestly not been alluded to in this schedule of examination. On the contrary, only the simplest and most necessary routine has been laid down.

The Affinity between Sectarianism and Quackery.—In the face of the universal condemnation of the methods of the so-called "Amick Consumption Cure" it seems entirely fitting that a sectarian publication (the *Physio-Medical Journal*) should rally to the support of this well exploited nostrum. This exhibition is but another instance of the close affinity that exists between sectarianism and outright quackery. For aught we know the words of commendation may be well paid for at so many dollars per inch of space, but the article of which we speak appears in the midst of regular reading matter.

CLINICAL MEMORANDA.

A CASE OF FIBRO-CYSTIC MYOMA REMOVED AT THE THIRD CELIOTOMY.[1]

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I. L. M. B., twenty-six years of age, single, a native of the West Indies, referred to me by Dr. J. S. King, of this city, was admitted to the Methodist Episcopal Hospital, March 3, 1890, with the following history: Four years prior to admission she noticed a swelling in the left iliac region. Prior to this there had been some menstrual disturbances, consisting mainly of amenorrhea. Eight months after the discovery of the tumor, and three years and four months before she came under my observation, a well-known and skilful surgeon of Kingston, Jamaica, W. I., attempted the removal of the tumor by celiotomy. The connections of the tumor were so extensive that the attempt at its enucleation was abandoned, and the abdomen closed. The patient made a good recovery from the operation. The tumor, however, continued to increase in size, and her general health failed notably.

Six months before admission, she suffered from an attack of general peritonitis, from which she recovered but slowly.

Upon admission, a large tumor of pelvic origin was found to be present, reaching to the ensiform cartilage, and extending laterally so as to occupy almost the entire anterior abdominal and pelvic regions, including both hypogastric and inguinal regions. It was found to be but very slightly movable. A semi-fluctuating area to the left of the median line gave the impression of a cystic portion of the tumor.

March 10th, an exploratory celiotomy by median incision exposed the tumor. The incision of the previous celiotomy had left a median scar, through which the present incision was made. Examination of the tumor now disclosed the fact that the most extensive adhesions, both visceral and parietal, were present. The omentum, transverse colon, and ileum, were all attached to the growth by adhesions, in which were seen ramifying vessels as large as the radial artery. In addition, the adhesions to the lateral pelvic wall and deeper pelvic structures were such as to effectually prevent its successful enucleation. In an attempt to investigate its intestinal connections, a loop of the ileum was opened; a Lembert suture was immediately introduced.

The fluctuating portion of the growth was brought to correspond with the abdominal incision and there sutured for a distance of about three inches. The remainder of the abdominal wound was then closed and dressed, and the patient put to bed. She rallied well from the operation, and, after firm union of the peritoneal surfaces had taken place, the cystic portion was opened by means of the thermo-cautery. The cyst-wall was at least an inch in thickness.

The cyst discharged at first a semi-transparent straw-colored fluid. Within a few days, however, this began to be mixed with débris from the tumor itself. Almost constant irrigation of the interior of the cyst was necessary to hold in check the constantly threatening, and, in spite of every care, occasionally developing septic condition of the parts. This continued for seven months, during which the patient's condition oscillated between improvement and loss of ground gained. She finally left the hospital, with the tumor about one-third less than its original size, and a sinus discharging, but which was kept clean by irrigating with hydronaphthol solution, iodin water, etc.

In January of 1893, the patient again visited this country, and Dr. King bought her to my office for examination. It was then found that the tumor had still further decreased in size, and seemed to be freely movable in all directions. A sinus, which, however, discharged but comparatively little, was still present. I expressed the opinion that the growth could be removed, and advised the woman to again enter the hospital for that purpose. This she consented to do.

On February 4th she underwent the third celiotomy. As a precautionary measure, the sinus and remains of the cyst-cavity were thoroughly washed out with a mercuric chlorid solution, and the opening closed by folding over it and suturing the adjacent abdominal wall. An elliptic incision was made so as to include the mouth of the sinus, the cicatricial tissue resulting from the former operations, and the entire thickness of the abdominal wall. The omentum was found to be extensively adherent to the abdominal wall and to the anterior surface of the tumor as well. So extensive were these adhesions that it was decided to remove a portion of the omentum with the growth. This was, therefore, carefully tied in sections with catgut, and the tumor freed in front in this manner. The lateral attachments of the tumor were found to include both broad ligaments, and portions of the latter were tied off with silk ligatures; the attachments to the uterus were easily separated, although the growth sprang from this organ. The adhesions previously existing between the growths and the transverse colon and the small intestines had entirely disappeared. The abdominal wound was closed by means of silkworm-gut and the crossed suture. The silk ligatures were led out of the lower angle of the wound.

The patient rallied well from the operation, and the case pursued a typically aseptic course. The silk ligatures from the stumps of the ligated broad ligaments came away on the sixteenth day following the operation.

The tumor removed is about the size of a child's head at birth, and consists of a fibro cystic growth. The remains of the cyst-cavity are plainly visible. The latter extended through nearly its entire antero-posterior diameter; but a very thin wall separated it posteriorly from the peritoneal cavity.

[1] Read before the Brooklyn Surgical Society, March 2, 1893.

ESOPHAGOTOMY FOR THE REMOVAL OF A BUCKEYE-NUT.

By WILLIAM D. HAMILTON, M.D.,
OF COLUMBUS, OHIO.

On the evening of September 2, 1893, I saw an inmate of the Central Ohio Insane Asylum, in consultation with the members of the house staff. The patient, Levis S., twenty-four years of age, who had never been up to the average in intelligence, was a strong convalescent from mental disease. He had tried to swallow a green buck-

eye four hours previously. His sufferings brought him to the attention of the physicians in charge, to whom he related the facts.

An esophageal bougie was introduced by Dr. George Stockton, meeting an obstacle in the gullet. The posture of the man's head and neck was such as to relax the muscles in front. The chin was somewhat depressed toward the sternum. There were gagging, ineffectual attempts to vomit, and discharge of mucus, blood, and saliva. Efforts to swallow water were painful and futile. The patient was hoarse and there was some dyspnea.

A bougie, repeatedly inserted, met a firm substance, seven and a half inches from the incisor teeth. The neck was short and muscular and the thyroid gland was large. Deep palpation with the fingers through the cervical tissues against the spine proved nothing definite. In a thin subject the foreign body could probably have been outlined. The smoothness and fixity of the mass were evident. The use of the esophageal forceps through the mouth offered no chance of extraction; while propulsion of the body was impracticable and hazardous. An exploratory esophagotomy was advised. The man was etherized the following morning at the Mount Carmel Hospital in the presence of Drs. Stockton, Deischle, and Lindsay. An incision was made, three and a half inches in length, along the inner edge of the left sterno-mastoid muscle, the center being opposite the cricoid cartilage. The omo-hyoid muscle was then drawn upward, out of the way.

The sheath of the great vessels was exposed, and these were pulled away from the median line, with the overlying muscle, by means of a retractor. The trachea and thyroid gland were likewise drawn inward to give more room. At the bottom of the cut a lump could be felt with the finger. Incising the distended gullet at this point, a yellowish-white substance could be seen. The nut was soon pried out with a director. Its greatest diameter was about one inch. Two or three small vessels were tied. The wound in the esophagus was closed with a few catgut stitches, which did not enter the mucosa. Their insertion would have been easier before extracting the foreign body. The esophageal wall was at that time more accessible. A small pledget of iodoform-gauze was left in the lower angle of the wound. The unoccupied portion of it was closed with silk sutures.

Dr. Stockton fed the patient through a stomach-tube for three weeks. The instrument was carried in through the nostril. The wound was dressed on the third day, and the drainage-gauze was renewed. Some leakage and suppuration had taken place. A solution of boric acid (gr. x to water, ℥j) was used as a drink (Southam). The patient left the hospital on the ninth day, with the wound partly healed. After his return to the asylum, daily cleansing with hydrogen dioxid was ordered and the usual dressings were employed. Soft food was given by the mouth at the end of the third week from the operation. On October 25th the man was permitted to eat more substantial food. His neck was not wholly sound until November 5th; since this time no dietary restrictions have been necessary. The tardy process of repair was due in some degree to the contused condition of the esophagus. The continuance of the artificial feeding may have had some effect in preventing the formation of a traumatic stricture. The man is now in excellent health.

SARCOMA OF TONSIL; EVULSION THROUGH THE MOUTH.[1]

BY J. SOLIS-COHEN, M.D.,
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A SPINSTER, fifty-eight years of age, was recently brought to me in consultation concerning a tumor of the tonsil which was stated to have been of some three and a half years' duration, and to have enlarged much more rapidly during the last six months than during the previous three years. The morbid mass was about the size of a small hen's egg, and was almost entirely covered by a distended and adherent soft palate, a very small portion of the tonsil being exposed at the extreme inner surface. Of this mass the tonsil itself seemed of the size of a large walnut. The tumor extended conically quite up to and upon the surface of the hard palate; while its extreme circumference could not be delimited by the finger forced behind the soft and hard palate. There was no glandular involvement. There was no pain, and there had been no pain during the entire history of the growth. There was some dysphagia, and some impairment in voice and in articulation—all mechanic in character. Removal of the growth through the mouth was decided on. After the adherent palatine folds were detached from the surface of the tonsil to which they were adherent, a section of the tonsil was removed with cutting forceps. Histologic examination of this fragment having confirmed the diagnosis of sarcoma, evulsion of the growth was practised as follows:

The patient being in the sitting posture, the parts were benumbed with cocain solution. Then the soft palate was divided with the incandescent electric knife so as to expose the growth vertically, which was then removed partially by evulsion with the fingers, and partly in fragments with forceps. It was found to be adherent to the periosteum of the palatine process of the superior maxillary bone, and quite a large section of this periosteum was detached by torsion. There was considerable hemorrhage, which was readily arrested by compression. After the raw surfaces had been thoroughly scraped with the finger-nail, and freed from fragments and roughnesses, they were submitted to energetic friction with small pieces of sponge saturated with undiluted lactic acid; and were then left to themselves without stitching.

Severe pain in the ear of the corresponding side was complained of immediately after the operation, and it continued for some twelve or fifteen hours. Otherwise the patient was free from suffering and underwent a complete and rapid recovery from the operative procedure, the edges of the incision uniting as promptly as though they had been sutured.

It is to be expected that there may be recurrent or consecutive sarcoma in this case, as ensues in almost all cases of the kind. Nevertheless, there is a prospect that this may not take place, inasmuch as the patient was healthy, and free from any apparent glandular involvement.

[1] Report to the Section on Otology and Laryngology of the College of Physicians of Philadelphia, December 20, 1893.

HOSPITAL NOTE.

MULTIPLE DEVIATIONS OF BOTH LEGS IN A RHACHITIC CHILD; OSTEOTOMY OF FIVE BONES PERFORMED IN ONE SÉANCE; RECOVERY.[1]

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C. I., ten years of age, entered the Butini Hospital in November, 1890. The father had always been healthy. The mother had had nine children, of which the patient and a brother, fourteen years old, were the only ones living; one child died at the age of eight years, from suppurating glands in the neck; another at the age of three years, from pulmonary tuberculosis, while another, at the age of two and a half years, died in convulsions. The remaining four children were stillborn. The mother's health has always been quite good until the birth of her last child (stillborn), about three years ago, which has left her an invalid, the disease probably being of a nervous nature, affecting the legs; the patellar reflexes are very much exaggerated, especially in the right leg, with great loss of strength in both limbs.

The patient, a little girl, was well developed at birth; she could walk when fifteen months old, but did not speak until three years of age, when, after a very severe fright produced by a loud noise, she suddenly exclaimed "Mamma." From this day she continued to talk, but ceased entirely to walk or run. At the time of her fright her legs were perfectly straight and well formed. As the child could no longer walk, she remained in bed for a period of three years, and it was during this time that the legs commenced to deviate. For the three years preceding the operation, that is to say, since 1887, she did not remain constantly in bed, because her parents forced her to get up and walk with the aid of crutches. When about nine years of age she had a cold abscess on the arm, which was opened, and the patient then went to Cannes for the purpose of taking sea-baths, in order to complete the cure for the abscess. When she returned home, after a stay of three months, she was so much improved that she could walk a little without crutches. However, soon after, the legs became still more deformed, and the patient, even with crutches, walked with great difficulty, and the parents now decided to have something radical done.

On admission the thorax was slightly deformed. Above the nipples there existed an excavation in the thoracic frame; nodosities slightly pronounced on the costal epiphyses. Auscultation of the heart and lungs revealed nothing abnormal. The abdomen was normal. The head was large; the cranium squarely built, the parietal protuberances prominent. The teeth presented no signs of rhachitis. Both humeri were larger than normal. Over the left olecranon was seen an old cicatrix caused by the operation for the cold abscess. The submaxillary glands, and those of the left armpit were increased in size. Nothing was noted as to the skin; the subcutaneous tissue was well-developed, as also the muscles; the mucous membranes were of a healthy red. A cicatrix of a former spina ventosa existed on the fourth finger of the right hand. The urine was of a pale-yellow color, and transparent; it was not rendered turbid by boiling; mixed with a solution of acetic acid, the gases produced by the formation of the carbonates were seen to escape, but no turbidity was produced. No albumin or sugar was present; the reaction was acid, the density 1010. Both legs were found to be greatly deviated, as is shown in Fig. 1. There was a very decided forward curve of both legs, and the right thigh was conspicuous. The curve of the thigh took in about equally the entire femur, while the curve in the legs was localized in a most evident manner in the lower third of both tibia and fibula. The curve was slightly more pronounced on the right than on the left side. There also existed, but very much less

FIG. 1.

pronounced, an external curve in the legs, producing a genu valgum. Neither the tibio-tarsal nor the tibio-femoral epiphyses presented any pathologic condition, excepting that the circumference of the condyles of both femora were projecting and sharply defined. The different articulations were normal, and the active and passive motions were preserved. The child walked with great difficulty, was obliged to support herself on crutches, was quickly fatigued, and without crutches she could only walk a few steps.

The operation, performed November 18, 1890, consisted in an osteotomy of the tibia and fibula of both legs in their lower third, and an osteotomy of the right femur. Dr. Kummer proceeded in the following manner: An external incision was made over the lower third of the fibula, and then the finger was introduced between the extensor digitorum communis longus muscle and the peroneus brevis muscle, thus separating them, after which they were held apart by an assistant. The periosteum of the fibula was then divided and peeled off the bone, and was pushed aside by an elevatorium placed on both sides of the fibula. The transverse division of the bone was accomplished by hammer and scissors. The hemorrhage was very slight; the incision was closed by suture; silk being employed for closing this incision, and for all the others as well. The wound was then dressed with iodoform-gauze, over which was placed a thick layer of gauze sterilized by steam under pressure. I would here remark that this is the customary dressing employed by Dr. Kummer in the greater part of his operations when infection is not to be feared. At the

[1] Surgical Clinic of the Butini Hospital, Geneva, Switzerland. Service of Dr. Kummer.

same level, an incision was then made over the crest of the tibia; the skin, subcutaneous tissue, aponeurosis, and periosteum were divided. They were then held apart, and a cuneiform excision, with the base situated anteriorly, was made in the tibia. The angle opposite the base corresponded to the angle of flexion of the leg; consequently, after this cuneiform excision, the straightening of the leg was attended with no difficulties. The incision was closed as already described. The same operation was then performed on the other leg, and here also the straightening was very easily accomplished after the cuneiform excision had been made in the lower third of the tibia. Above the articulation of the right knee a linear osteotomy was then performed on the femur. It was executed after Macewen's method, the only modification being that the line of section was not transverse, but slightly oblique in the upward direction, and from the inner toward the outer side of the bone. The straightening of the thigh was very easy after this operation. The hemorrhage was slight. A plaster-of-Paris dressing was then applied, completely covering the lower extremities from the toes to the pelvis inclusive.

The sequel of the operation was perfectly simple. Once only, five days after the operation, the temperature rose to 38° C., but declined after an enema. The plaster-of-Paris dressing was allowed to remain until December 28th (forty days), when it was removed, and perfect consolidation of the straightened bones was found to have taken place. Massage, baths and electricity were now commenced. The patient left the hospital perfectly cured on February 13, 1891, walking without crutches or a cane. She only had a slight deviation of the left leg in the sense of a genu valgum.

We saw the child in February, 1892—that is to say, one year after leaving the hospital. Her mother tells us that the child has been doing well since the operation, and continues to walk without aid. She has been regularly

FIG. 2.

at school, a thing that was impossible before the operation. The parents and the patient declare that they are thoroughly satisfied with the result of the operation. However, the child becomes tired a little more quickly than the average one of her age, and on examination we find that the left-sided genu valgum has slightly increased since leaving the hospital, while on the right side there also exists some genu valgum, although in a much less degree. On the other hand, the forward deviation of the legs, which was so pronounced before the operation, has absolutelely disappeared. (See Figs. 2 and 3.) The

FIG. 3.

general health of the child has also improved considerably, this fact being easily explained by the exercise that the child has in the open air.

I have put this case on record, thinking that it might be interesting as an osteotomy on five bones, performed in one séance, and cured at the end of six weeks by a single plaster-of-Paris dressing, without pain or fever, and with a good result, which is to all appearances a definitive one and is not common.

My thanks are due to my friend Dr. Vallette, who had the kindness to take the second and third photographs.

NEW INSTRUMENT.

A NEW TONGUE-DEPRESSOR AND AN EAR-SCREW FOR THE REMOVAL OF FOREIGN BODIES.

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I. A NEW TONGUE DEPRESSOR.

CONSIDERING the unsatisfactory character of the many tongue-depressors in use, and the necessity for one that would combine all requirements and at the same time be cleanly, I devised such an instrument in 1875, the illustration of which is here given. It consists of a solid, smooth piece of German silver, 21.5 cm. long, 3 cm. wide, and 1.5 mm. thick. The handle is 11 cm. and the tongue-support 3.5 cm. long, the two being connected by a band 7 mm. wide and 7 cm. in length. At the extremity of the spoon the metal is bent downward at an angle of about 135°. Usually the spoon-end is so fixed as to form an angle of 115° with the handle. This

angle can be readily varied if necessary, as the connecting band bends easily.

The advantages possessed by this instrument over others are: its simplicity, in that it has no joints; its smooth, polished surface making it impossible for dirt and septic matter to collect; its light weight; the quickness and ease with which it can be cleansed, as it can be either burned or boiled in a moment, and every part be reached; its small size; the fact that when in use it does not rest upon the teeth or lips of the patient, but gives its main support to the tongue at its extremity; the angle of the spoon—usually no other part of the spoon exerting any pressure—and it can be used in cases wherein almost any other instrument occasions either a tendency to retching or involuntary closing of the jaws.

Fig. 1.

A new tongue-depressor.

For rapid and careful work I have, as yet, not seen an instrument that pleases me so well. The only objection to it is the space it occupies in one's satchel. This is, however, obviated by straightening the instrument before packing and bending into shape again before using it. I have never seen a jointed tongue-depressor that could be called clean. Many depressors are made with fenestræ, which are often a disadvantage in that they allow part of the tongue to protrude, and at the same time serve as receptacles for the collection of various impurities.

Rubber depressors become discolored, and consequently look unclean, and to look so is often as great an objection as to be unclean. The metal depressor of Cohen, unjointed and made of a single piece of metal, I consider a most valuable instrument, but I find by practical experience that the bending of the tip of the tongue-end and the narrowing of all that part of the instrument between the handle and tongue in my depressor, as well as the spoon-angle, are very important items. Again, being made of German silver, it is better than either a nickel-plate, steel, or brass instrument, the nickel flaking off in the first; and it is better than silver in that it is more firm and rigid than an equal weight of that metal, while it is not acted upon by chemicals so readily. At the same time—not a minor consideration—the cost is decidedly less.

The instrument has, so far as I know, been used in this country to but a limited extent. In Europe, and especially in Geneva, Vienna, and Milan it is more generally in use, having been brought to the attention of the profession there by my brother, the late Dr. B. Frank Lautenbach, while Assistant Professor of Physiology under Professor M. Schiff, at the University of Geneva, Switzerland.

2. A NEW INSTRUMENT FOR THE REMOVAL OF FOREIGN BODIES FROM THE EAR.

In the course of treatment of an old case of necrosis of the middle ear, with two sinuses leading back of the auricle, there was, as a resultant of the long-continued inflammation and consequent acrid discharge, a very marked constriction of the external meatus. Within this constriction could be discerned polypi and masses of granulation-tissue. Upon removing as much as possible of these growths the diameter of the meatus was increased, but not sufficiently to thoroughly explore the middle ear, or enough to allow of the removal of all the overgrowth of fibro-mucous tissue. In order to make a more thorough exploration of the middle ear I resorted to the use of laminaria tents, and, later, of elm tents, to temporarily enlarge the meatus. On one occasion, when I was about to remove an elm tent with the angular forceps, the patient gave his head a sudden twist and the tent disappeared in the middle-ear cavity (the membrana tympani and the chain of bones, of course, being absent), and despite the use of tents in the meatus, sufficient space for its removal could not be obtained.

After the trial of various expedients, including the galvano-cautery, with the view of destroying the tent, or as much of it as possible, I at last devised (May 29, 1893) an ear-screw, of which the actual size is represented in the illustration. It will be observed that the screw is a double-headed one, that is, a two-threaded screw; the pitch is considerable, and the threads present an angle forward; the posterior surface of each thread is at right angles to the shaft. The screw and shaft are of hardened steel, the handle round and of ivory, allowing of easy revolution.

Fig. 2.

A new instrument for the removal of foreign bodies from the ear.

The slightest twist of the screw sends its two points into any substance ordinarily soft, such as wood or any vegetable structure. On account of its high pitch the screw travels rapidly inward. After it has made its way into any substance it will not slip out, but will, when traction is exerted, either bring with it whatever is attached to it, or tear out as much as the diameter of its threads, in consequence of the posterior surface of the thread being at right angles to its shaft.

Upon using this instrument I was at first successful in

tearing out only pieces of the tent, but after a sitting or two had the satisfaction of finding my screw firmly fixed in the swollen tent, and by gentle and persistent traction with a swinging motion, and enlarging of the meatus by an incision, succeeded in accomplishing its removal.

The instrument having been devised, it is surprising how often it proves of use. By means of it I have since removed two beans and a shoe-button from the middle-ear cavity and a piece of wood and a shoe-button from the nasal chambers.

For the removal of non-metallic foreign bodies from the middle ear I think it the most convenient and safest—in fact, with the exception of the forceps and syringe, the only instrument to be used. Before it is to be used the syringe will probably be employed, and this failing, then the screw may be tried. The forceps, on account of the room it takes in an already crowded space, is to be employed but rarely, often complicating the case by forcing the foreign body into a more inaccessible position than the original one.

For foreign bodies in the meatus, the syringe failing, the screw is to be used when the nature of the foreign substance admits of it: the forceps, in cases to which the screw is not adapted, and to a few cases in which we can be sure of its removal without incurring any danger to the membrane or the middle ear.

Both instruments have been very carefully made for me by Lentz & Sons, of Philadelphia, and my thanks are here given to them for the careful carrying out of my instructions.

1723 WALNUT ST.

MEDICAL PROGRESS.

A Mode of Controlling the Circulation through the Abdominal Aorta.—MACEWEN (*Annals of Surgery*, vol. xix, No. 1, p. 1) details a method of controlling the circulation through the abdominal aorta that he has employed for more than fifteen years and found simple, always ready, easily applied, and efficient. The subject lying on his back, the assistant stands on the left, facing the patient's feet and in a line with the umbilicus. He then places his closed right hand upon the patient's abdomen, a little to the left of the middle line, the knuckles of the index finger just touching the upper border of the umbilicus, so that the whole shut hand will embrace about three inches of the distal extremity of the aorta above its bifurcation. The assistant then stands upon his left foot, over which his right foot is crossed, resting upon the toes, and leans upon his right hand, thereby exercising the necessary amount of pressure. With the index finger of the assistant's left hand the weight necessary for the purpose can easily be estimated by the effect produced upon the flow of blood through the common femoral at the brim of the pelvis. Whenever the flow of blood through the femorals is absolutely arrested the abdominal aorta is sufficiently controlled and no further weight ought to be applied. The pressure exercised can be varied at will by increasing or decreasing the angle that the assistant's body makes with the floor. As the abdominal aorta sometimes bifurcates higher than usual, a trial of the effect of the pressure at the part selected ought to be made before the operation is commenced, testing the result of pressure upon both femorals. When both are equally controlled the bifurcation occurs below the point pressed upon; when only one is controlled the hand requires to be placed on a more proximal part. As there is no direct muscular effort required in maintaining the pressure, further than the preservation of the equilibrium, the position can be maintained by the assistant without undue strain on his part, and without shifting his hand for at least half an hour, a time amply sufficient for the performance of most operations requiring the control of the circulation through the abdominal aorta. Among the conditions in the course of which this procedure has been employed are disarticulations at the hip-joint, amputations at the upper third of the femur, large pelvic vascular tumors, intra-pelvic hemorrhage, and traumatic hemorrhage from the external iliacs; in all, the control of the circulation was absolute. In the amputations of the hip none of the patients lost from the proximal side of the cut vessels more than a couple of ounces of blood, and that only from the oozing of the general surface; there was no loss from the main vessels. In amputations, also, after the main vessels were ligated the assistant could, by a slight momentary relaxation of the pressure, "show" the position of any hidden or retracted vessel without altering the position of the hand relatively to the aorta. This form of pressure would be equally valuable for uterine hemorrhage. The pressure is, as a rule, followed by no discomfort. Should violent vomiting or coughing occur in the course of the compression the pressure would have to be increased, as otherwise the abdominal muscles might during the strain elevate the hand from the aorta. In case of vomiting, the operation might be interrupted for a few minutes while local pressure is applied.

Basal Drainage for Chronic Hydrocephalus. — PARKIN (*Lancet*, No. 3664, p. 1244) has reported a case of chronic hydrocephalus in a child, eleven months old, in which relief of threatening symptoms was afforded by drainage of cerebro-spinal fluid. The infant had a large head, the greatest circumference of which was seventeen and a half inches. The temporal fossæ were obliterated; the anterior fontanel was large and the membrane covering it was tense. There was marked separation of the two halves of the frontal bone, and to a less degree of the parietal bones. The eyes were prominent and the sclerotics were visible above the pupils. The child was fairly intelligent for its age and had had no convulsion, although it was always restless and irritable. Sight and hearing were good. There was a history of tuberculosis in the families of both parents. The enlargement of the head had been noticed from the age of five months, and had been gradually progressive. There was no history of syphilis. The child was treated with mercury and chalk, and later with potassic iodid and ferric iodid. In the course of three months the circumference of the head had increased to eighteen and a half inches, and the general condition of the child was worse; it took little or no notice of anything and frequently vomited; it lay perfectly quiet in bed, not moving its limbs or uttering the least cry, even when taken up roughly and shaken

violently from side to side. The eyes were open and staring and the head was retracted. Food was taken badly and vomiting occurred thrice in twenty-four hours. The pulse was 84. The anterior fontanel was hard and no pulsation was felt through it. A little chloroform was given and the under surface of the cerebellum was exposed about one inch below the superior curved line of the occipital bone and half an inch to the right of the middle line. The bone was easily gouged away, exposing the tense dura mater. After incision of the latter a few drops of fluid came away, but the passage of the probe into the sub-arachnoid space, with gentle raising of the cerebellum, allowed the escape of clear cerebro-spinal fluid. A horsehair drain was inserted into the sub-arachnoid space and was brought out at the inner end of the wound, which was closed with a continuous suture. On the following day the condition of the child was most satisfactory. The eyes were opened intelligently and no part of the sclerotics was visible above the pupils. The anterior fontanel was soft and pulsatile. The child moved its limbs about and recognized its mother. The wound healed by primary union. The drainage, though never very abundant, was sufficient to keep the intra-cranial tension low, as indicated by the softness of the anterior fontanel. The horsehair drain was removed eighteen days after the operation, no fluid having come away for three days. The improvement was continuous and persistent, and after the lapse of three months there was no indication of recurrence.

The Radical Cure of Hernia.—In a discussion upon the radical cure of hernia, held at the recent meeting of the British Medical Association, PARKER (*British Medical Journal*, No. 1715, p. 1037) took the ground that the radical cure of inguinal hernia in childhood and infancy can be attained with ease, almost as a matter of certainty, and that operation should be urged when the disease exists at this time of life. The cure of inguinal and femoral herniæ in men and women is considered attainable in the large majority of cases, the exceptions being sometimes the large herniæ, at other times the small. Macewen's operation is held to be the best for inguinal and femoral herniæ at all periods of life. Umbilical hernia in adults is thought to be capable of radical cure, in a proportion, however, much below that of success in femoral and inguinal, and far short of the requirements of many of the cases. The radical cure is further believed, as a rule, to be applicable to strangulated and unstrangulated herniæ alike.

THERAPEUTIC NOTES.

Magnesium Sulfate Hypodermatically as a Purgative.—From advance sheets of the Ninety-sixth Annual Report of the Maryland Hospital for the Insane we learn that, upon the suggestion of the superintendent, Dr. Rohé, one of the assistant physicians, DR. J. PERCY WADE, has made a study of the purgative action of magnesium sulfate injected subcutaneously. For this purpose forty-six patients were selected, who suffered from habitual constipation and required from two to three ounces of a saturated solution of magnesium sulfate to induce one or more free movements of the bowels. With a hypodermatic syringe, having a capacity of two drams, and properly sterilized, sufficient of a two per cent. solution of the salt was injected to represent from 1.86 to 4.5 grains. It was found that small doses acted as efficiently as large doses, and that one small dose followed in a short time by a second small dose proved more effective than a single large dose. The injections were made on the outer aspect of the left arm, midway between the elbow and the shoulder, and caused no unpleasant local or constitutional sequelæ. One hundred injections were made in all, successfully sixty-seven times and unsuccessfully thirty-three. Fifty-three times a single evacuation of the bowels was induced; ten times, two movements. In two cases of melancholia with habitual constipation that resisted nearly all purgatives the injections were absolutely futile. The shortest interval that elapsed between the giving of the injection and the evacuation of the bowels was three hours, the longest fourteen hours, the average seven. The subcutaneous injection of magnesium sulfate to induce purgation would seem indicated in case of gastritis, when a purgative is required and the stomach rebels; in abdominal surgery, when the administration of a purgative by the mouth would be likely to cause vomiting; and in cases in which consciousness has been lost and swallowing is not possible.

To Render Cocain-anesthesia safe, GAUTIER (*Gaz. des Hôp.; Wiener med. Presse*, No. 47) recommends the conjoined employment of trinitrin. Of the following solution, 15 minims may be injected subcutaneously:

℞.—Cocainæ hydrochloratis . . gr. iij.
Liquor nitroglycerin. (1 per ct.) . gtt. x.
Aquæ destillat. . . . . f℥ijss.—M.

THOMAS (*Rev. de Laryng.*) has employed the following formula by topical application to the pharynx and larynx for the production of local anesthesia:

℞.—Cocainæ hydrochlorat. . . gr. xlviij.
Liquor nitroglycerin. (1 per ct.) . ℥ijss.
Aquæ destillat. . . . . f℥j.—M.

The feeling of dryness that ordinarily follows topical applications of cocain is said not to follow upon the use of this solution, while the anesthetic and vaso-constringent action seems not to be diminished.

A Carbonated Laxative.—

℞.—Sodii phosphat. . . . ℥j.
Aquæ destil. . . . . f℥x.
Syrup. simplicis . . . f℥ij.
Tinct. limonis . . . . gtt. xxv.
Acid. citric. } . . āā ℥ss.—M.
Sodii bicarbonat. }

S.—Two tablespoonfuls, or more, as required.

PAUL, *Les Nouv. Rem.*, No. 23.

For Pruritus.—

℞.—Acid. carbolic. . . . . ℥j–℥ij.
Liq. potassæ . . . . . f℥j.
Olei lini . . . . . ad f℥j.—M.
Ft. linimentum.
S.—Apply with a soft cloth.

Practitioner, No. 306.

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THE INFECTIOUSNESS OF PULMONARY TUBERCULOSIS.

IT is best, perhaps, to speak of the infectiousness of tuberculosis, and for the present to leave the question of contagion aside. The terms "infection" and "contagion" are, indeed, interchangeable; but the first expresses a remote, the latter an immediate contingency. Besides, the first is the most usual way in which the disease is transmitted. It is true there are instances of its direct transmission by contact, but then these are, for the most part, affections of exterior parts, of the joints, skin, eyes, etc. With such cases we are not in this paper particularly concerned, yet they should be remembered as showing tuberculosis in an important and significant light.

Of the infectiousness of tuberculosis of the lungs, a disease, as DR. CORNET well observes, that maintains no strongly-marked definite type, but shows variations within wide limits, there is now no longer any reasonable doubt. It is perhaps true that pulmonary tuberculosis is not so intensely infectious as is smallpox, or diphtheria, or scarlet fever. We might say, with a not too violent perversion of a classic metaphor, that it is *parasitically* infectious—that is, it flourishes most in the company of other diseases (and under these conditions really assumes the severity of an infectious disease), and on a soil specially prepared for it. It is at this point that hereditary predisposition becomes so mysteriously and characteristically important. And as to the first part of our proposition, namely, that tuberculosis of the lungs requires the alliance of other diseases, or, to speak more accurately, other morbific germs, to make its contagion effective, we must cite a profound and suggestive paper by DR. CORNET, which he entitles "Mischinfektion," wherein he shows that the numerous family of the saprophytes are the active allies of the tubercle-bacillus and that their ravages lead to those rapidly fatal cases of pulmonary tuberculosis, to the formation of cavities, etc. Another excellent authority, DR. BENNET, while he admits the infectiousness of tuberculosis, denies that it is infectious, except in "pre-breathed" air—a useful phrase, of much descriptive truth, which may be left to explain itself.

At this point we cannot do better than examine critically some of the typical cases of infection. A and B live together—man and wife. A becomes tuberculous; B nurses him. Several months pass by and A dies. Proximately B too dies of tuberculosis. In this case the presumption of infection or contagion is justly held to be very strong, and although there is here no *direct* proof of the transmission of tuberculosis, yet we are justified in believing that the disease has really been communicated by A to B, for B's conditions, as we shall endeavor to show, were just those under which this kind of contagion becomes effective. An even better instance is the following, to be found in the appendix of MR. G. A. HERON'S book on the *Communicability of Consumption*. "OGSTEN records the case of a healthy family of ten persons without hereditary taint. A son contracted consumption abroad and returned home to be nursed. His two sisters nursed him, while a brother shared his room and bed. These three and the patient all died of consumption. The parents and the four surviving sons remained healthy."[1] We look upon this case as particularly strong in favor of the infection-theory. It is scarcely possible not to believe that the brother and sisters were helped to their malady, if not actually infected, by the patient. Here, as in all other examples, there are these characteristics to be noted: First, that the infection exists amid conditions that augment its virulence. Thus we see that

[1] British Medical Journal, 1884, vol. ii.

an atmosphere which contains the bacillus and the saprophytes together—an atmosphere, as DR. BENNET excellently terms it, of *pre-breathed* air, pre-breathed by tuberculous persons, of course—is the one that carries with it the most effective contagion. Secondly, there is commonly some very close relation between the carrier and the recipient of the poison, between the person that infects and the one that is infected—a relation like that of husband and wife, patient and nurse—of such a kind that the healthy person is kept in constant attendance on the other, so that there must be frequent imbibitions of the poison, continual inoculations, so to speak, which at last have their effect. In sober truth, it is this constancy and closeness of relation, this uniformity in the condition, this unvarying danger, that forms a set of conditions from which it is difficult to escape with impunity.

That such are the conditions in which the tuberculous infection is paramount may be sufficiently seen from the first typical case that we quoted. It is profoundly significant, too, that pulmonary tuberculosis is more often communicated by the husband to the wife than by the wife to the husband. In Mr. HERON'S appendix we find fifteen of such cases described, and in thirteen the infection came from the husband, and in two from the wife. The reason must be that the wife, having, as a rule, no occupation abroad, is more constantly in the sick-room, in the midst of the infection, let us say, whereas the husband has his business and his avocations to call him away. In support of these views, we may be pardoned if we cite another typical instance of infection, an instance hardly susceptible of two explanations, as most cases unfortunately are: "A healthy young military officer, without hereditary taint, whose wife was in the last stage of consumption, took with her a sea-voyage lasting four months. On account of bad weather they were confined very much to their cabin, which was small and badly ventilated. On their arrival in London the wife died, and the husband showed the first signs of consumption." It is scarcely possible to find any better instance to illustrate the conditions of a true case of infection.

One notion of an infectious disease is that of a contagion which spreads rapidly at a rate above the mean, and never changes its epidemic form. By an endemic disease we understand one that always resides in the community. In this sense pulmonary tuberculosis is undoubtedly an endemic disease. But it never, or seldom, spreads at a rate above the mean. M. ARTHAUD,[1] indeed, has described four instances in which it has apparently assumed the severity and gravity of virulent contagion. His best example is to the following purpose: "A merchant of Paris asked me to attend his phthisical son. On inquiry I found that this lad, aged seven years, was in the habit of playing in his father's counting-house, where there was a tuberculous employé who expectorated profusely on the floor. After the son I subsequently attended the father, and then the grandfather. Of this family the mother alone, who never appeared at the counting-house, remained healthy." There was, we doubt not, a close connection between the cases M. ARTHAUD observed, a connection which points to a real danger, and which assuredly demonstrates that regular measures of prophylaxis should be enforced in any community or domicile which becomes evidently the seat of contagion. In addition to such evidence, the frequency of pulmonary tuberculosis among the Catholic Nursing Orders of Prussia has always been regarded as an instance of true infection, and one worthy of the gravest attention. For the convent-life of the nurses, its uniformity, its isolation, together with the fact that none is admitted but the robust, and that sixty-three per cent. die of pulmonary tuberculosis, form a set of conditions that, as we have endeavored to show, we hope not fancifully but on good evidence, change this disease when it exists—it might be only in a latent condition—into an infectious form.

There are, however, cases in which the foregoing conditions are not evident, and only the possibility of acquiring the disease apparently remains. Such a case is the following: A, in whom no hereditary taint was discovered, died at the age of fifty-eight, of tuberculosis of the lungs, after an illness of four years. His father, mother, and only sister died (but not of tuberculosis), aged respectively eighty-seven, seventy-one, and seventy-seven years. RIFFEL[2], who quotes this case, had unexampled opportunities to study A's antecedents back through two hundred years. He asserts that he could not have been infected at home, or in any intercourse without, for the patient in question led a perfectly uniform

[1] Annales de la Policlinic de Paris, 1892, p. 49.

[2] Mittheilungen über die Erblichkeit und Infektiosität der Schwindsucht, Braunschweig, 1892, p. 166.

life in his native village, and never stirred from thence. In what sense, then, can this be called a case of infection, or is there any infection here? MR. HERON, a radical thinker on this subject, attributes such cases to some hereditary tendency toward tuberculous disease. He cites a case,[1] of a family of eight persons, of which seven died of pulmonary tuberculosis, but these seven people were so far removed from each other that there could not possibly have been any connection between these cases, as there would have been if infection were the cause.

It will thus be seen that our conceptions of the infectiousness or the contagiousness of a given disease will depend upon our interpretation of these words, and upon this subject we may have more to say at another time.

THE OPERATIVE TREATMENT OF AKROMEGALY.

ALTHOUGH our knowledge of the symptom-complex first described by MARIE, and by him given the descriptive name of akromegaly, is of comparatively recent date, the clinical picture has become a perfectly well defined and familiar one. Our knowledge of the pathology of the affection, however, is much less certain. The only lesion that has been found to which a causative influence could be attributed is hyperplasia, or other enlargement, of the apophysis cerebri, the pituitary body; but this lesion has been by no means constant. In some cases changes in the thyroid gland have been present, sometimes hyperplasia, sometimes atrophy. The more characteristic anatomic changes consist in a hyperplasia of the tissues that originate from the mesoblast, *i. e.*, those of the connective-tissue group: bone, cartilage, areolar tissue. Therapeutically little or nothing has thus far been accomplished. In the absence of a definite pathology the treatment has been symptomatic and empiric. In a few cases, upon the basis of a functional relationship between the thyroid gland and the pituitary body, extract of thyroid gland has been administered, but without encouraging results.

In the face of this hopelessness of the prognosis, and in view of the boldness and, we may add, the precision of modern cerebral surgery, respectful consideration should be given to any proposition calculated to bring relief by operative interference in cases in which it can be definitely determined that the pituitary body is enlarged, and that threatening symptoms arise as the result of the compression of adjacent structures to which this enlargement gives rise. Such a procedure has actually been undertaken in a case reported in a recent number of the *British Medical Journal* (No. 1722, p. 1421) by DR. RICHARD CATON, Honorary Physician to the Liverpool Royal Infirmary, unfortunately, however, with a fatal outcome, although the patient lived for three months after the operation, and was relieved of the intense pain from which she had previously suffered. The case was, briefly, that of a married woman, thirty-three years old, who presented the classic train of symptoms of akromegaly. Those peculiar to the case consisted of pain in the distribution of the left facial nerve and some loss of sensibility over the left half of the lower jaw; degenerative changes took place in the optic papillæ, with loss of sight, and hearing was also lost; late in the history of the case albumin appeared in the urine from time to time. When it became evident that there existed intra-cranial pressure, operative interference was proposed, but was not acquiesced in by the friends of the patient. At a later date, however, the necessary consent was obtained. The opinion of MR. VICTOR HORSLEY was secured, who agreed to the propriety of operation, which was undertaken by MR. F. T. PAUL, Honorary Surgeon to the Infirmary.

Although the removal of the tumor at this time was not considered feasible, it was hoped that by making an opening in the skull and relieving the intra cranial pressure, the intense pain could be relieved, and that by making this opening in a suitable position it could, if desired, be subsequently enlarged and the removal of the pituitary body undertaken. As the right eye was useless, it was decided that the bones forming the anterior portion of the right temporal fossa should be removed at the first operation, and if at that time or subsequently any attempt were made to remove the tumor, the right orbit should be emptied and the aperture in the skull enlarged by the removal of its outer wall. The dura at once bulged into the opening as soon as three or four square inches of its surface had been exposed; and no pulsation of the brain could be discerned. Some vessels in the dura oozed pretty freely, and as this bleeding was unaffected by irrigation with hot water a soft, new, sterilized sponge was laid in the wound and covered by the flap, and the site of operation dressed with iodoform, cyanid-gauze, and salicylated wool. The

[1] Evidences of the Communicability of Consumption, p. 112.

sponge was removed on the following day and the flap placed in position. The wound never closed entirely, but, as already stated, the patient was relieved of her previous intense suffering, and lived for three months. At no time was her condition considered suitable for the more severe operation.

Upon post-mortem examination the pituitary body was found to be as large as a Tangerine orange, projecting half an inch above the level of the lesser wings of the sphenoid bone. Microscopic examination demonstrated the existence of a new growth, presenting the histologic structure of a round-celled sarcoma. The optic chiasm and the adjacent portions of the optic nerves were flatted, but not involved in the growth. The sella Turcica measured one and one-half inches antero-posteriorly, one and one-third inches transversely, and one-half inch in height. Of course, the unfortunate outcome of the case is to be regretted, but this lay in the nature of the case itself rather than in a failure of the operation or of the principles on which it was based. Whether or not more could have been accomplished had the operation been consented to and undertaken earlier must remain a matter of doubt. At any rate the lesson is an instructive one; and in future the propriety of operation in selected cases of akromegaly should receive due consideration.

EDITORIAL COMMENTS.

The State Board of Medical Examiners.—It is announced that Governor Pattison has selected from the membership list of the State Medical Society the following gentlemen as members of the Pennsylvania State Board of Medical Examiners, representing the regular medical profession: H. G. McCormick, of Williamsport, for three years; Henry Beates, Jr., of Philadelphia, for three years; W. J. R. Kline, of Greensburg, for three years; A. R. Hulsizer, of Philadelphia, for two years; N. S. Foster, of Pittsburg, for two years; J. E. Silliman, of Erie, for one year; and Samuel W. Latta, of Philadelphia, for one year. The President of this Board, together with the Presidents of a Board of Homeopathists and a Board of Eclectics, the Lieutenant-Governor, the Attorney General, the Secretary of Internal Affairs, and the President of the State Board of Health, constitutes a Medical Council, to which will be submitted the questions proposed to be asked applicants for license to practise medicine in the State of Pennsylvania; and from these the Council will select the questions to be asked, except in the departments of materia medica, therapeutics, and practice of medicine. The Council will meet twice a year and supervise the examinations of the State Boards, and issue to the successful applicants licenses to practise medicine and surgery. The first meeting of the Examining Boards will be held on the first Tuesday of April. Successful candidates must further register in the respective counties in which they propose to practise. Applicants who will receive their medical degrees after July, 1894, must have attended at least three courses of lectures in some legally incorporated medical college, and after July, 1895, attendance upon at least four courses of lectures will be required. An applicant who fails in the first examination may again be examined after the lapse of a period of not less than six months or more than two years. Physicians licensed in other States, in which the standard of requirements is substantially the same as in Pennsylvania, will be entitled to a license without further examination. The new legislation does not affect physicians already regularly registered; nor does it apply to physicians from other States called in consultation with registered physicians in this State. Pitiful as must be the tacit admission by those who may not have thought seriously upon the subject, that there can be more than one kind of medicine and one kind of physician, it is still a source of congratulation that at least the worst forms of incompetence and downright quackery will no longer find the soil of Pennsylvania adapted for their propagation. At the same time an irresistible impulse has been given to the movement for higher medical education, inasmuch as all medical colleges that hope to have their pupils receive recognition in the Commonwealth must maintain a definite standard, and lengthen their course of study to at least four years.

A Legal Dispensary.—The novelty of a legal dispensary based upon the same general principle as the medical dispensary, has been organized by the students of the Law School of the University of Pennsylvania. As far as can be learned the institution is the first of its kind established in this country in connection with a law school. For the present, services are to be held twice a week in the evening, and will be available to all persons that have been wronged and seek redress by legal means, but are unable from poverty to retain a lawyer in the ordinary way. No charge is made for services, but if a case is taken into court the client must pay the actual costs for papers, minor services, and the like. It is said that the idea of the dispensary was suggested by a reflection cast upon the legal profession in an address upon medical ethics by Dr. Weir Mitchell by the inquiry "Who ever heard of a law hospital?" In a lecture delivered in Philadelphia some two years ago by Dr. Gould, among other things, it was said: "Every hospital of the land is carried on by the unpaid labor of physicians. Is there *one* great institution, or one ever so little institution, where poor folks can go and get legal advice, counsel, and help gratis?" Properly conducted, the new dispensary should prove doubly beneficial and must be considered a distinct ethical advance.

Microphotograph and Photomicrograph.—There is a lack of clearness as to the definitions and in the use of these two terms. Etymologically the term *microphotograph* should mean *a small photograph*. There is nothing in the formation of the word implying that the object photographed is either small or large, but in most cases the object is of microscopic size. It is manifestly absurd, as has been done, to force the word to stand for "an enlarged photograph of a microscopic object," as the

prefix *micro-* forbids that. On the other hand, the word *photomicrograph* etymologically authorizes the definition, *a photograph of a small or microscopic object.* Here again there is nothing in the formation of the word implying anything as to the size of the photograph, though it is also usual that the photograph is made with a microscope, and of sufficient size for observation with the naked eye. In German and French usage the term microphotograph is almost the only one used—evidently a loose custom, that does not permit of making an important distinction in the facts. English and American scholars have long recognized the necessity of both distinctions, which is summed up by Dr. Mercer in this way: "A photomicrograph is a macroscopic photograph of a microscopic object; a microphotograph is a microscopic photograph of a macroscopic object."

A National Bureau of Health.—If present indications lead aright the long-deferred organization of a National Bureau of Health will soon be a reality. The people seem to have awakened to the necessities of the case, and prompt action may be expected. The proposed measure has received the indorsement of nearly every medical society in the country and has encountered no real antagonism, and large numbers of petitions have been presented in its favor. The only fear is that the legislation may be pushed aside by other less important matters. It is to be hoped, however, that the agitation will be kept up until the bill that is now before both houses of Congress has been finally passed. It is believed that the President, the Secretary of the Treasury, and administration officials generally are favorably disposed toward the bill. The President, in his annual message to Congress, strongly recommended additional safeguards for the public health such as are proposed by this measure.

SELECTIONS.

HOSPITALS AND THE PROFESSION.

I UNDERSTAND that some two millions of people in London receive medicine and medical attendance gratuitously per annum, and I do not doubt that the proportion is not less in this city. It is a favorite argument that the number of practitioners has not much increased during the past thirty years, while the population has enormously increased, and thus encouragement is given to the young physician. But for one person treated gratuitously thirty years ago, there must be now ten who receive medicine and medical attendance on this condition. I state it with some humiliation, and as showing somewhat the reverse side of the beatific picture, that any number of highly educated practitioners are willing to take and compete for medical-club appointments for the paltry sum of two shillings six pence per annum for medicine (so-called) and medical attendance. Eliminate the class of people quite able to pay this paltry sum for this boon, and it surely must diminish the number entitled to free medical attendance and medicine apart from the State. I go further, and maintain that the individual who cannot lay aside from his earnings two shillings six pence per annum for such a contingency as medical attendance and medicine is *ipso facto* a pauper, and ought not to be ashamed to be treated as such. Any man in receipt of anything over from twenty to twenty-five shillings per week, who receives medical treatment gratuitously, is thereby demoralized, and the profession is being robbed by any agency, call it what you like, that panders to him in this direction. Surely an income of even ten shillings per week can afford two shillings six pence per annum for medical attendance. Never having held a club appointment, I am free to confess that I see nothing wrong in the club system; it is the principle on which life and other assurance is based, and it is infinitely better to combine for anything than to accept gratuitously that which ought to be honorably paid for. It is at this point that the hospital and the younger and poorer practitioners come in conflict, and the hospital being the stronger, the practitioner comes off second best in the struggle.

Who, then, is to blame for the penny, the threepenny, and the sixpenny dispensary system so rampant in London, and which I certainly regard as an undoubted professional humiliation? But if the value of medical services is estimated by what is paid for them, is threepenny advice not infinitely better than that for which nothing at all is paid? The fact is this, Guy's Hospital physicians and surgeons, and the physicians and surgeons of all large hospitals, give their advice for nothing or next to nothing, and thus rob the junior, seeing that by so doing they are enabled to get enormous fees from the wealthier sections of the community. But is there any exclusive right so to do vested in any portion of the profession? Has one man not as good a right as another to treat poor people, and thus get experience and reputation, and consequently material advantage? To the former of these questions my answer is an emphatic No; to the latter an equally emphatic Yes. This, and this alone, is the *raison d'être* of the ever-increasing number of our hospitals and special institutions.—PROFESSOR D. CAMPBELL BLACK, *Inaugural Address, Anderson's College, Glasgow, Scotland.*

SANITARY REFORM.

THE labors of the true sanitary reformer lie in four directions:

1. In an endeavor to understand simply the nature of diseases, their alliances, their true distinctive characters, the modifications to which the body is subjected under the influence of diseased action, and the chemical or physical measures best adapted for the removal and prevention of disease. Labors of this kind require the highest order of medical intellect; they are altogether removed from the business of the mere politician; and they imply in him who prosecutes them a mind fully charged with all the modern doctrines of chemistry, physics, and the laws of life. These labors tend to lead the mind from effects back to causes.

2. In an endeavor to seek out primarily the causes of diseases, irrespective of the symptoms and the other details involved in the consideration of the diseases themselves. Efforts in this line of research should embrace observations conducted on a large scale, and bearing on the effects of locality, climate, season, meteorology, contagion, habit, diet, and occupation, in so far as they give rise to distinctive types of disease.

3. In striving to make accessible to all classes of society the vast stores of information already acquired in regard to the two forms of inquiry noted; and in having them scientifically popularized and diligently taught, especially amongst the child-population.

4. In giving free scope and encouragement to those mechanical arts which tend to improve the beauty and convenience of towns and cities; in lessening muscular labor; in increasing the comforts of the poor man's home; and in instituting such an elevated class of amusements and occupations for leisure moments as shall make the heart happy and the mind healthy.

In these offerings to reason and knowledge lies the one and true *elixir vitæ*, the beginning and the end of sanitary science.

Principles ignored, all else is practically mere dilettanteism, mere playing with details of principles, the principles themselves being undeveloped—a common error. Right honorable and honorable gentlemen may debate in the senate-house, may sit on committees of inquiry, publish tons weight of blue-books, and invest magistrates with new powers; but the mortality-tables of the Registrars-General will continue to tell how little can be done until a new educational impulse is given to the people, leading to personal health, to health of the whole community, springing from health in the unit of that community.—Dr. B. W. Richardson, *in The Asclepiad.*

CORRESPONDENCE.

TWO FURTHER SUGGESTIONS FOR THE RELIEF OF INGROWING TOE-NAIL.

To the Editor of The Medical News,

Sir: On page 622 of the last volume of your valuable able journal (November 25, 1893) there is published a clinical lecture of mine concerning ingrowing toe-nails, and varoius other lesions of the toes and feet. Among other methods of treating ingrowing nails which I there mentioned was one of excision of a piece from the side of the toe in such a way that cicatricial contraction would draw the redundant tissue away from the nail, pressure being thus obviated. I stated that this method was first suggested by a charlatan, and being found good had been adopted in the general practice.

A little while ago I received a letter from Dr. George W. Gay, of Boston, in which with a little good-natured chaffing he asked me to give my authority for this statement, saying also that the method had been advised and published by Dr. Cutting. Being averse to casting the slightest implication upon so worthy a practitioner as Dr. Cutting, I ask you to give me space to say, as I did personally to Dr. Gay, that the statement was quoted from one which I often heard during my instruction eighteen or twenty years ago in the Chicago Medical College, when I was under the surgical tutelage of Dr. Edmond Andrews. That statement was certainly made long before Dr. Cutting wrote his article for the *Reference Handbook*, but I am unable now to do more than make my apologies to Dr. Cutting, in case he or anyone should construe the published remarks to refer in any way to himself. I am the more glad to be able to do this because I think the method a good and sensible one, and prefer to regard it as coming from legitimate sources rather than from the brain of a charlatan.

To my surprise my remarks, as noted in your journal, brought me several other communications from gentlemen whom I esteem, concerning methods of treating this most exasperating little condition. In this way there have been suggested to me two methods which I have not personally employed or known of, but which I think are well worthy of publication. My first letter was from Dr. M. A. Veeder, of Lyons, N. Y. He says: "There is a plan that I have devised and employed for ten years past which answers very well in the ordinary run of cases of this disorder, and likewise in certain forms of onychia. It consists simply in cutting a piece of ordinary felt plaster, sold for use in cases of corns or bunions, so as to be the exact size and shape of the nail about which the ulceration is located. The bit of plaster thus shaped and fitted to the nail is to be firmly attached thereto, so as to press aside the overlapping granulations from off the nail. By holding it in this position a minute or two, until it dries and adheres firmly to the nail, it becomes strongly fastened and will stand considerable rough usage, but as an additional security I wrap a strip of isinglass plaster three or four times around the toe, including the felt. If properly applied the relief is immediate, and the cure is complete as soon as the thinned and jagged edge of the nail underlying the granulation has grown out to its normal size. I have made a note of this method in one or two medical journals, but no attention has been paid to it except on the part of those to whom it has been personally explained or demonstrated."

Another letter was recently received from Dr. Bogman of Zanesville, O., who writes regarding his own method. He says: "My maternal grandmother, both parents, and all the children, had ingrowing toe-nails from early youth. My own four children, the oldest twelve and the youngest three, all are affected. There is scrofula on all sides, but no tight or ill-fitting footwear. I was not perhaps ten years of age when my mother had both great toe-nails avulsed three times, each operation being followed by reproduction of a worse-deformed nail, and its outgrowth accompanied by extreme suffering, nearly causing tetanus. She summoned Dr. Miller, of Providence, R. I., and in my presence demanded that he operate again, but in her way, and as follows: Place the foot on a plank, crowd the flesh as far as possible toward the side proposed for operation, pressing the toe firmly down. With one stroke of a mallet drive a chisel through the nail and flesh, vertically, at the point where the nail begins to incurve and extending from the end of the toe to the joint. Repeat the same operation on the other side. Dr. Miller declined to operate thus. He was informed that she would do it herself. He knew his patient well and yielded. I cannot forget her argument in support of her theory: 'Doctor, if there is no nail to grow into the flesh, and no flesh for the nail to grow into, surely there can be no ingrowing nail.' The operation was performed on the following day. The offending portion of the nail and flesh was cut from both great toes on both sides, with the result of leaving the toes with a nail, and at this writing it is one-half inch in width and of natural curvature. Anteriorly the toes are wedge-shaped, the nails forming the wider or thicker, and the bottom of the ball the thinner end. The nails

and toes have given no further trouble, and it is now about forty years since the operation.

"I first read medicine with Dr. Miller and know that he operated several times by this method, and had chisels made, right and left, with one corner curved in such a manner as to avoid the tuberosity of the distal phalanx near the joint. He published the operation as his own, and was severely scored by Prof. S. D. Gross for his crude and unsurgical methods, which savor more of the carpenter than of the surgeon. At a later period, while a pupil of Dr. Gross, I excused the methods by explaining whence they came. As you no doubt know, Dr. Gross did essentially the same operation, using a bistoury to excise the offending portion of the nail and flesh at a single stroke. When I took the whip in my own hands I reasoned, after two such operations, that the large ulcer and cicatrix were objectionable. Avulsion of the entire nail seemed equally so, as the toe thus lacked its natural protection. I therefore and therefrom devised an operation, and first performed it in 1872. I have repeated it twenty-three times within my memory, with satisfaction to my patients and to myself except in the first case. Such nails are usually thickened or very brittle. I therefore soak the foot in warm water to soften the nail, and then place it in cold water to contract the bloodvesssels. With a strong, pointed knife I cut, not split, the nail longitudinally along the line of first indication of incurvation from before backward, and carry the incision backward to and *beyond* the matrix. With another thin knife I deepen the incision vertically to two-thirds the thickness of the toe, keeping close to the bone, but avoiding the periosteum. I then incise the flesh on the same side of the toe parallel to the incision in the nail, forming a flap of the integument and as much as may be of the cellular tissue, thus forming anteriorly a V. Grasping the portion to be excised entirely with the forceps and lifting it to near the matrix, I dissect out as thoroughly as possible its full width and depth, removing the matrix intact. Closing the wound with adhesive strips, there is present a hair-line of cicatrix along the side of the nail, but opposite the matrix is a small point which must heal by granulation. The worst-deformed case on which I operated was a patient, a druggist without a clerk, driven to immediate operation by extreme suffering, who was detained from his business but two and a half hours, and this principally by nausea from the anesthetic. Both toes were operated on, on both sides, and all dressings were removed on the eighth day without inconvenience. I gain by this form of operation the smallest possible amount of cicatrix, the preservation of an adequate portion of the nail and the entire ball of the toe, with least detention from business."

Both these methods seemed to me of sufficient value to reproduce what I have quoted for the benefit of those whom it may concern.

Very truly yours,

ROSWELL PARK.

BUFFALO, N. Y.

THE CONTAGION OF PUERPERAL FEVER.

To the Editor of THE MEDICAL NEWS,

SIR: The profession has in the past been almost unanimously of the opinion that puerperal fever was a highly contagious disease, and a well-known London practitioner and the author of a standard work on the practice of medicine has stated that no physician should engage in midwifery practice for at least three weeks after attending upon a case of puerperal fever.

A very interesting discussion has recently taken place in the Obstetrical Society of London upon this subject. The experience of a majority of the speakers agreed with my own, that by cleanliness and the use of antiseptics a medical practitioner can engage in midwifery practice, although he has been recently in attendance upon a patient suffering from puerperal fever. By keeping the nails and hands scrupulously clean, and by washing them in an antiseptic lotion repeatedly during the time he is in attendance upon the case, I am quite satisfied that the danger of conveying the poison is very slight. To illustrate this I shall give a brief report of some cases in my practice three years ago:

In November, 1890, I was attending a patient with puerperal fever, and visited her for the last time on Sunday, 17th, on which day she died. Having been engaged to attend a number of labor cases, I had doubts as to the advisability of doing so; but after mature consideration I decided to take charge and use antiseptic measures. On the Friday following (22d) I saw the first case. The labor was tedious, but natural. On Sunday (24th) a second case came off. This was attended by profuse hemorrhage, leaving the patient exhausted. On Monday (25th) a third case was attended. These patients were visited by me daily for the usual period, and all recovered without a bad symptom. They were all young women, with fairly good constitutions. The antiseptic measures adopted were washing my hands thoroughly in a warm solution of carbolic acid every time I made vaginal examinations, and having the genitalia of the patients sponged with a carbolic solution after delivery.

It would seem, therefore, that by adopting antiseptic measures—and every medical man should do so—the risk of conveying the poison is reduced to a minimum.

Respectfully,

C. H. L. JOHNSTON, S.R.C.S., L.M. (Edin.)

ST. JOHN, N. B., CANADA.

NEPHRITIS WITHOUT ALBUMINURIA.

To the Editor of THE MEDICAL NEWS,

SIR: I would consider it a great favor if those encountering in hospital or private practice cases of suspected chronic nephritis of the sort referred to on page 671 of THE NEWS of December 9, 1893, would give me an opportunity to study such cases, as well as the urine. I am desirous of collecting and analyzing a sufficiently large number of these cases in order to arrive at some definite idea as to the frequency of their occurrence, their detailed symptomatology, and their precise pathology. The cases are not those exhibiting the ordinary symptomatology of renal fibrosis, or contracted kidney, such as are usually encountered in middle life or in the aged, but rather cases in which there is very slight or even no detectable cardiac hypertrophy or anterior sclerosis, and in which, notwithstanding the absence of albumin from the urine, the amount of the latter passed is habitually below the normal. In these there are present, besides increased arterial tension, also

headache, vertigo, nausea, and pain in the loins, all aggravated by physical exertion.

Respectfully, D. D. Stewart, M.D.

2620 N. Fifth St., Phila.

NEWS ITEMS.

Eleventh International Medical Congress.—It is announced by the Secretary-General of the Eleventh International Medical Congress that American members will pay on the English, French, and Italian railways single fares for double journeys, and will obtain a reduction of 20 per cent. on fares for Italian round-trip tickets.

The documents required for their identification will be sent to Dr. A. Jacobi, Chairman of the American National Committee, in January, and Americans intending to visit the Congress will have to apply to him for them.

Full particulars concerning the journeys will accompany the documents.

Messrs. Thomas Cook & Son, London, Paris, Rome, and Naples, should be applied to for accommodation and for tickets for the excursions to Rome, Naples, and to Sicily. Such excursions will be arranged at Rome under the guidance of Mr. Forbes, member of several scientific societies and correspondent of the *Times*, for Naples, three days, including Vesuvius, Pompeii, Capri, Sorrento, Castellamare, Bajae, etc.; for Sicily, ten days from Naples, including Messina, Taormina, Catania, Girgenti, Siracusa, Palermo, and return to Naples.

The fares for members of the Congress will be considerably reduced and comprise hotel accommodations, carriages, guides, boats, etc., about 70 francs each for the three days, and 285 francs for the ten days.

Full particulars concerning these excursions will be contained in a leaflet to be added to the instructions and documents for the journey.

The members' fee is five dollars; that of their wives or adult relations, two dollars each. Checks or money-orders may be sent to Prof. L. Pagliani, Rome, Italy. Credentials have been promised in the near future. When they arrive (none were received last year) they may be too late for many who have started or are about to start. Dr. Jacobi, who is not informed of the cause of delay, proposes to supply in as official a form as he thinks he is justified in doing, credentials which are expected to be of some practical value. The North German Lloyd has promised to recognize them. It is suggested, besides, that a passport may increase the traveller's facilities.

Only the North German Lloyd (22 Bowling Green) and the Compagnie Générale Transatlantique (3 Bowling Green) has thought fit to grant any reductions to Congressists.

The reductions on Italian railways are available from March 1st to April 30th.

The Faculty of the Medico Chirurgical College of Philadelphia has created three new clinical chairs, viz.: One of Genito-urinary Surgery, one of Orthopedic Surgery, and one of Otology. These, together with the vacancy in the chair of Clinical Medicine, will be filled permanently at the close of the present session.

The Fifth District Branch of the New York State Medical Association will hold its Tenth Annual Meeting in Brooklyn on Tuesday, May 22, 1894. All Fellows desiring to read papers will please notify the Secretary, E. H. Squibb, M.D., P. O. Box 760, Brooklyn.

The Canadian Medical Association will hold its next annual meeting at St. John, N. B., in the month of September of the current year. The Association has had a long and useful experience, and has done much to unite and further the interests of the Canadian medical profession.

Books and Pamphlets Received.

Tenth Annual Report of the Committee on Lunacy to the Board of Public Charities of the Commonwealth of Pennsylvania. September 30, 1892. Harrisburg: Edwin K. Meyers, State Printer, 1893.

Sviliuppo di Sarcoma entro a Fibromiomi Uterini. Nota del Dott. Davide Giordano. Milano, 1893.

Contributo allo Studio delle Lesioni Chirurgiche del Pneumogastrico. Dott. Davide Giordano. Milano, 1893.

Archives of the Cincinnati College of Medicine and Surgery. Vol. I. Reprinted from the Cincinnati Medical Journal, 1893.

Vitelline-duct Remains at the Navel. By Ludwig Hektoen, M.D. Read before the Gynecological Society of Chicago, April, 1893.

Transactions of the Medical Association of Georgia. Forty-fourth Annual Session, 1893. Atlanta, Ga.: Published by the Association, 1893.

Hereditary Ataxy. By Sanger Brown, M.D. With Discussion by J. A. Ormerod, M.D., and Professor Bernhardt. Reprinted from the North American Practitioner, 1893.

Medical Department of the University of Wooster. Announcement for 1893–94. Cleveland, Ohio.

Announcement of the College of Physicians and Surgeons of Ontario, for the Academic Year 1893–94. Toronto, 1893.

Transactions of the State Medical Society of Wisconsin, for the Year 1893. Vol. XXVII. Madison: Tracy, Gibbs & Co., 1893.

Ueber die Ausführung der Guajacol-Jodoforminjectionen bei tuberculösen Localerkrankungen. Von Professor Dr. Max Schüller, in Berlin. Frankfurt a. M., 1893. Verlag von Johannes Alt.

Clinical Gynecology. Being a Handbook of Diseases Peculiar to Women. By Thomas More Madden, M.D. Philadelphia, J. B. Lippincott Co., 1893.

Essential Details in the Conduct of Labor. By Kate Reynolds Lobingier, A.B., M.D. Pamphlet. Denver, Col., 1893.

The Duty of the State to the Insane. By Andrew MacFarlane, M.D. Reprinted from the Popular Science Monthly, 1893.

Address of the President of the Section on Neurology and Pyschiatry of the First Pan-American Medical Congress. Reprinted from the Alienist and Neurologist, 1893.

Erotopathia. By C. H. Hughes, M.D. Reprinted from the Alienist and Neurologist, 1893.

Kentucky School of Medicine in the City of Louisville. Register of Students, 1893. Circular of Information, 1894

Lupus: its Extirpation. With Reports of Cases. By B. Merrill Ricketts, M.D. Reprinted from the New York Medical Journal, 1893.

The Operative Treatment of Stricture of the Male Urethra. By John B. Deaver, M.D. Reprinted from the Philadelphia Hospital Reports, Vol. I, 1890.

Treatment of Appendicitis. By John B. Deaver, M.D. Reprinted from the Transactions of the American Surgical Association, 1893.

External Urethrotomy. The Report of Eight Operations and of an Unpleasant Complication met with in One of Them. By B. Merrill Ricketts, M.D. Reprinted from the Medical Record, 1893.

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ORIGINAL ARTICLES.

THE MORBIDITY AND MORTALITY OF NEGRO CONVICTS.[1]

BY R. M. CUNNINGHAM, M.D.,
OF ENSLEY, ALA.;
MEMBER OF SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION; OF THE ALABAMA, GEORGIA, AND TENNESSEE TRI-STATE ASSOCIATION; OF THE JEFFERSON COUNTY (ALABAMA) SOCIETY; JUNIOR COUNCILLOR OF MEDICAL ASSOCIATION OF ALABAMA; EX-PENITENTIARY PHYSICIAN, ETC.

IT is my purpose in this paper to present a few practical facts, with such deductions as may be logically made therefrom, concerning the morbidity and mortality of the negro as a convict.

Since my connection with the convict system of Alabama, there have been but two races represented in our convict population: the Caucasian and the negro—the latter including that hybrid of humanity, the mulatto of all shades. From the consecutive examination of some 2500 convicts that were in the penitentiary in March, 1883, and received from jail from that date to October, 1884, and from March, 1887, to October, 1890, it appears that 15.43 per cent. were white, and 84.57 per cent. were negroes, or in a ratio of 1 white to 5.41 negroes. Questions of health, morbidity, and mortality, then, practically mean the consideration of these important subjects in connection with and as applying to the negro race.

It appears from the penitentiary physician's and inspector's reports,[2] covering a period of nine years and seven months, that there were, from all causes, 553 deaths. Of the 553 deaths, 37, or 6.67 per cent., were among white convicts, and 516, or 93.33 per cent., among the negro convicts. Thus the ratio of white to negro deaths was 1 to 13.94, while the percentage of mortality of the white and negro was as 1 to 2.57. That is to say, that out of an equal number of white and negro convicts the mortality would be more than two and a half times greater in the negro.

Of the 553 deaths, 70, or 12.65 per cent., died from the direct and indirect effects of violence—accidental, suicidal, or homicidal. Of the 70 deaths from violence, 14 were white, or 37.83 per cent. of the total mortality among the white convicts; 56 were negroes, or 10.85 per cent. of the total mortality among the negro convicts. This leaves, dying from disease, including not known, 483, to wit: White, 23, or 4.76 per cent.; negro, 460, or 95.24 per cent; ratio of white to negro deaths from disease, 1 to 20, while the actual percentage of mortality is 1 to 3.69. That is to say, out of an equal number of white and negro convicts, the mortality of the latter would be 3.69 to 1 of the former, or a little more than 250 per cent. greater.

From these figures the following facts are established:

1. That there were nearly 5.50 times as many negroes as whites committed for crime.

2. That the negro mortality was nearly three times greater than the white.

3. That over one-third of the white deaths were due to violence.

4. That only a little over 10 per cent. of the negro deaths were due to violence.

5. That from an equal number of white and negro convicts there would be a little more than 3½ of the latter to 1 of the former that die from disease.

From these facts it may be logically concluded:

1. That (taking it for granted that our laws are impartially administered so far as race is concerned) there is something in or about the negro, some inherent principle or acquired property (the former being a part of his original creation, or from long-continued hereditary influences—the latter from environment, religious, social, or political), that prompts him to acts of crime, or that there is a deficiency of that restraining power that limits the action of the universal depravity of the races.

2. That as a physical entity he is, so far as his convict life is concerned, inferior to the white man, in anatomic formation and physiologic performance of function; or there is something in him that more greatly predisposes him to disease; or that aggravates the type of disease; or that he is wanting in recuperative or reconstructive power.

The first question I leave to the political economist, the moralist, or the philanthropist.

The second, however, to those who are responsible for his health and life, is a problem of absorbing interest. Strange to say, this aspect of the convict-

[1] Read before the Alabama State Medical Association, 1893.

[2] From March, 1883, to October, 1884, including only State convicts, wherever confined; from October, 1884, to October, 1886, State and County convicts; from October, 1886, to October, 1888, including only State and County convicts at the Pratt Mines; from October, 1888, to October, 1890, including State and County convicts at the Pratt Mines and State convicts at the walls at Wetumpka; and from October, 1890, to October, 1892, State convicts at the walls and at the Pratt Mines.

problem in Alabama has never received the attention it deserves, so far as the question of prison-life, work, and discipline affects the health and lives of negro convicts. So far as I know, there has never been any attempt to compare the mortality and morbidity of white and negro convicts, with a view of ascertaining the differences, if any exist, and the causes therefor.

I submit below in parallel columns, one for whites and one for negroes, a classification of the primary causes of death:

	NEGRO.	WHITE.
Unknown	37	1
Violence	56	14
Pulmonary tuberculosis	72	1
Peritoneal "	27	1
Acute miliary "	25	0
Miscellaneous "	40	3
Croupous pneumonia	66	2
Catarrhal "	4	0
Fibroid "	7	0
Pleurisy	11	0
Typhoid fever	26	3
Other fevers	16	0
Meningitis	15	3
Meningitis (tuberculous)	2	0
Pericarditis	3	0
Endocarditis	0	1
Organic heart-disease	28	3
Aneurism	2	0
Dropsy	5	0
Gastro-enteritis	27	2
Dysentery	1	1
Tertiary syphilis	2	0
Pernicious anemia	0	1
Erysipelas	2	0
Apoplexy	2	0
Paralysis	0	1
Lumbar abscess	1	0
Measles	1	0
Carcinoma	2	0
Bright's disease	2	0
Miscellaneous	19	0
Cystitis	1	0
Intussusception	1	0
Hip-joint disease	1	0
Pott's disease	3	0
Measles	7	0
Convulsions	2	0
	516	37

As a supplement to the foregoing, I submit also in parallel columns, one for white and one for black, a classification of the complications existing:

	NEGRO.	WHITE.
Croupous pneumonia	22	2
Catarrhal "	9	0
Pleurisy with effusion	16	0
Pulmonary tuberculosis	1	1
Tuberculous meningitis	5	0
Acute miliary tuberculosis	4	0
Tuberculosis of bowels	2	0
" of larynx	1	0
Organic heart-disease	8	1
Pericarditis	7	0
Atheroma	1	0
Tuberculous pleurisy	4	0
Gastro-enteritis	11	0
Perforation of bowels	10	1
Meningitis	5	0
Pleuro-pericarditis	1	0
Pneumonia and meningitis	1	0
Cystitis and stricture	1	0
Dropsy	7	0
Erysipelas	3	1
Dysentery	1	0
Bright's disease	1	0
Syphilis	1	0
Phlegmonous abscess	2	0
Cardiac thrombus	17	0
Malarial fever	1	0
Rheumatism	1	0
Pulmonary infarction	5	0
Abscess (parotid)	1	0
Paralysis	2	0
Measles	2	0
Jaundice	2	0
Bronchitis	2	0
Myocarditis	2	0
Pulmonary	4	0
Pericarditis and meningitis	1	0
	164	6

In discussing these tables, the 70 deaths from violence, and 37 "not-known" causes, are not here considered, leaving negroes, 424, and whites, 22. It appears that the primary diseases in the 424 negro deaths involved the thoracic organs in 265, or 62.50 per cent., to wit: Various forms of tuberculosis, 137; of pneumonia, 84; pleurisy, 11; heart, pericardium, and large bloodvessels, 33.

Of the 22 white deaths, the thoracic organs were involved with the primary disease in 9, or 40.90 per cent., to wit: Tuberculous disease, 4; pneumonia, 2; organic heart-disease, 3. It thus appears that there were nearly double the deaths among negroes from acute and chronic thoracic disease.

Add to these the same classes of disease in the complications, and we have 358, or 84.43 per cent., among the negroes, and 14, or 63.63 per cent., among the whites. These complications were in many cases the cause of death, but they do not represent a corresponding number of convicts, as sometimes two or more complications existed in the same case.

From acute febrile diseases there were 42 deaths, or 9.90 per cent., 26 from typhoid and 16 from other forms of fever, among the negroes; 3, or 13.63 per cent., among the whites. Occurring as a primary disease and as complications, there were among the negroes 50 cases of organic heart-disease, 36 chronic and 2 of acute myocarditis, 12 of pericarditis, making a total of 50, or 11.71 per cent.; whites, 6, or 27.22 per cent. Meningitis occurred as a primary disease and as a complication in negroes in 20 cases, or 4.71 per cent.; whites in 3 cases, or 13.63 per cent. Tuberculous disease in all forms existed as a primary disease or complication among the negroes in 182, or 42.92 per cent.; among the whites, in 6, or 27.27 per cent. Croupous pneumonia existed

among the negroes in 88, or 20.75 per cent.; among the whites, 4, or 18.18 per cent.

From the foregoing facts the following conclusions are legitimately reached:

1. That there is a much larger class of diseases represented among the negro than among the white deaths.

2. That the whites are more liable to die from accident, meningitis, and the essential fevers, than the negroes.

3. That the negroes are especially predisposed to tuberculous disease, the various forms of pneumonia, pleurisy, and organic heart-disease; in other words, to thoracic diseases generally.

The problem therefore resolves itself into the inquiry: Why are negro convicts predisposed to the development of these diseases?

1. Is it due to any deficiency in the anatomic development or formation? I shall have very little to say in answer to this question. Aside from the well-known facts—the black skin, flat nose, and flat foot, and the like—there is, in the negro race, as compared to the white, a lesser cranial and thoracic development and a greater abdominal and genital development. It is apparent to us all that the cranium is smaller in the negro than in the white; that the cranial capacity is less necessarily follows. Post-mortem examinations have convinced me that the cranial wall is thicker, the brain smaller, the convolutions less prominent, and the sulci more shallow. Hence, the inevitable conclusion follows that brain-function is not equal to that in the white race.

An examination of hundreds, or rather several thousand negroes, has convinced me that the normal thoracic movements in ordinary respiration are deficient, and that the thorax is not capable of as great movement during forced inspiration and expiration.

If this be true, what is the reason?

Does it lie in the want of muscular development, mobility of the bony walls, pulmonary elasticity or capacity, or in the encroachment of the abdominal organs below? In my judgment the causes are to be found: (*a*) in less lung-capacity; (*b*) less muscular development, particularly of the accessory muscles of respiration; and (*c*) the greater or less encroachment of the abdominal organs. The first two are largely conjectural; but I think the latter is susceptible of demonstration by physical signs. Examine, for example, a series of whites and a series of negroes, noting carefully the line of beginning hepatic dulness on the right side, and the line of beginning gastric tympany on the left; it will be found that these lines are *higher* in the negro than in the white. If there be no error in these observations, the conclusion is inevitable that the perpendicular diameter of the interior of the thorax is thereby diminished. In a general way I will say that it is very rare that the physical signs are *absolutely negative*. There may be diminished expansion, a prominent clavicle with depression below and above, and asymmetry in movement, points of asymmetric percussion-sounds, vocal resonance, and fremitus, with more or less modification of the normal, rhythmic, clear vesicular murmur, with, in a considerable percentage of cases, adventitious sounds. The latter remarks are true to some extent in both races, but much more conspicuously so in the negro.

As to the greater abdominal and genital development, all one has to do is to see 300 or 400 negroes naked in a large bath-house, and then step through a door and see 75 or 100 white men in the same condition, to convince him of the correctness of this view.

The general muscular development, taken as a whole, is good in the negro; but the chest-muscles, and those below the elbow and knee, are deficient. I conclude, therefore, that the negro, as a whole, is inferior to the white in anatomic development and in the symmetric arrangement of systems and organs. That, therefore, there should be a correspondingly weakened function and predisposition to disease is apparent. That environment has a great deal to do with the causation of disease, both predisposing and exciting, there can be no question.

The question, therefore, remains: Have the white and negro convicts the same environment? I answer emphatically that they have. This is certainly true at the places whence the foregoing statistics were obtained. Hence the difference in mortality cannot be explained by a difference in environment.

The effects of prison-life, however well ordered, are, regardless of race, beyond all doubt detrimental to both mind and body. It affects the mind more in the white and the body more in the negro.

Now, just in proportion to the bad hygienic surroundings, both general and personal, will these effects obtain, particularly those on the physical condition. If these conditions are such as to be productive of disease they will operate more disastrously on the negro, both in morbidity and mortality. Therefore, it is under more or less unfavorable environment that the physical inferiority of the negro race becomes manifest. In certain statistics published by Colonel John G. Milner, it appears that in certain Northern prisons, in New Jersey, Pennsylvania, New York, and Ohio, and in the border State of Missouri, for a series of years the average white mortality was 1.55 and the negro mortality 5.05 per annum. The same may be said of the negro as a soldier. Among the United States white troops during the war the average

annual death-rate was 53.04 per 1000; and of colored troops 143.04 per 1000, or 1 to 2.69, a difference almost as great as that in the Alabama penitentiary. Given the same environment, the white man will have much the greater longevity. If the environment be bad, then the negro mortality will increase much more rapidly than the white. That prison-life, however well ordered, is always more or less unfavorable to life and health, the statistics of civil and military prisons prove. Why is this so?

The following, in my judgment, are the principal reasons, so far as civil prisons are concerned :

First—as to the convict himself. If he is guilty, there is not only a possibility but even a probability that there is some occult condition which we do not understand, inherited or acquired, that operates upon the mind in such a way as to suggest crime, or that cripples the moral inhibition that restrains crime, in either case affecting that mental and moral equipoise that inspires honesty and obedience to law, so that crime is committed not merely because of the common depravity of mankind, which in the individual criminal may be unrestrained, but because of this occult condition over which the criminal has no control. If there be truth in this conjecture, is it not logical to conclude that this occult condition would affect, in some way, the physical condition also? If the prisoner be innocent, then the horror of the situation—innocence in chains—would certainly act detrimentally upon health.

In both cases, whether he be guilty, the victim of some imperative power that forces him to crime, or the voluntary agent of total depravity; or innocent, the victim of circumstances or of perjury, the prisoner is a human being deprived of his liberty, with all that that means to him, socially, politically, religiously, and sexually, and the inspiration to work, to live, is almost dead. He becomes subdued and cowed, and his whole mental, moral and physical nature is more or less depressed and weakened. He therefore at once becomes more susceptible to disease; latent diatheses become active; existing mild diseases are increased in severity; the susceptibility to germ-infection is increased; and, finally, his ability to withstand disease of all kinds is more or less diminished.

Second. The change of hygienic surroundings, from a segregated to an aggregated relationship—from home, however humble, to prison, where he is thrown in contact with hundreds of his fellow-beings, breathing more or less the same air, becoming exposed to the infection of germs of various diseases, especially the tubercle-bacillus, submitting to a hygiene to which he has not been accustomed—in a word, to a changed environment altogether.

Third. The change of his personal hygiene in matters of clothing, diet, sleeping, drinking, and the kind and amount of work, etc.

These general remarks apply to all convicts, white and black, but the first affects the white more, and the negro least; the last two affect the negro more especially. That is to say, the negro has less capacity to accommodate himself to any new environments, particularly to bad ones. Finally, in the majority there occurs, sooner or later, a certain mental and physical resignation to the inevitable, that counteracts to a great degree the evils of prison-life; in other words a hygienic mental, moral and physical acclimation.

These conclusions are supported by the following facts: First. The greatest amount of morbidity and the greatest mortality are among those recently received. For example, the total deaths at the Pratt Mines, of State and County convicts for the two years ending October 1, 1888, were 80. Of these only 17 were received prior to January 1, 1886, and 63 from that date to October 1, 1888.[1] Also the total deaths of State and County convicts at the Pratt Mines, and State and County convicts at the walls, for the two years ending Oct. 1, 1890, were 132. Of these, 59 had been in prison more than one year, and 36 not more than six months.[2] Further, convicts are not classed up until they have been in prison for some time, and, therefore, the third and fourth-class convicts are mostly of those recently received. Percentage of mortality for each class—two years: First class, 3.68; second class, 6.49; third class, 8.61; fourth class, 13.79; $11 class (*i. e.*, those who work outside and for whom the contractors pay $11), 5.40.

Thus the mortality diminishes as the class is increased and *vice versa*.

The following is the percentage of morbidity represented in the days lost: First class, 13.80; second class, 18.47; third class, 19.58; fourth class, 41.38, or nearly one-half the total; $11 class, 6.79. It is a fact about which there can be no dispute, that the greater the number of convicts required to keep up a certain average, the latter depending upon the average term of the convicts, the greater is the morbidity and mortality. Hence the death-rate of County convicts is always greater than that of State convicts.

I think that I have shown in this paper that the negro, as a convict, so far as a low rate of mortality is concerned, is a failure. It would be interesting to enter into a full and complete discussion of the adaptability of the negro for coal-mining, but I forbear, inasmuch as this subject was thoroughly considered by me in a paper read before

[1] See Inspector's Report, p. 199.

[2] See Inspector's Report for 1890, p. 254.

this Association two years ago. I will say, however, that there is no doubt in my mind that the county convict system ought to be abolished altogether, and if not altogether, certainly so far as mines are concerned. And not more than 50 per cent. of the negroes sentenced to the penitentiary should work in coal-mines, and not even these unless there is adopted a system of prison hygiene that will permit of some open-air exercise, with sunlight.

In conclusion, I will submit that the race problem will be largely settled in the event of public works being established throughout the South—which means ready money for the negro; this means the profitable practice of prostitution, and this in turn means gonorrhea and consequent sterility; tuberculosis and other pulmonary diseases will do the rest.

SOME REMARKS ON THE PRACTICAL TREATMENT OF HEPATIC ABSCESS.[1]

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DURING the last year there came under my care two cases of hepatic abscess, presenting features of peculiar interest from an operative standpoint, and, on reviewing the literature on the subject, I was so struck with the wide difference of opinion in reference to treatment, that I determined to make a complete investigation of the causes, and, if possible, arrive at the methods which would present the least immediate mortality and the most perfect technique.

CASE I.—On September 7, 1892, C. B., an Irishman, aged fifty-three, a resident of Galveston for the last ten years, was admitted into the Sealy Hospital, under my care. Twenty-five years previously, when in Rangoon, he had contracted an acute dysentery, which remained chronic up to a few months before admission. He had repeated exacerbations, and four months before suffered from intense diarrhea, associated with pain and tenesmus, and occasionally with pain in the right side. On September 24th the patient came under my personal notice, and his condition was then as follows: He was slightly jaundiced, and much emaciated; the morning temperature was 101°, the evening temperature 102°; the pulse varied from 120 to 130; the tongue was red, raw, and coated. He complained of intense pain in the right side. Inspection revealed a great bulging of the right lower costal zone, and deficient respiratory movements in the right lower ribs. The liver was enlarged both upward and downward; the lower edge could be easily palpated, and ran in a curved line to the right, across the abdomen, touching in its course a point midway between the right costal margin and the umbilicus. Superficial dulness was absolute, and extended upward as high as the fifth rib in the mammary line, the seventh rib in the axillary line, and the ninth rib in the scapular line. There was no perceptible movement of the mass underneath the abdominal wall, nor could a friction-sound be distinguished. In the center of the abdominal swelling a soft spot could be felt, where an indistinct sense of fluctuation was perceptible. There was still diarrhea, and the stools were examined carefully for amebæ, but with a negative result. The fluctuating spot before mentioned was punctured with a hypodermatic needle, and thick, flaky pus flowed slowly through the needle. This on examination contained no amebæ, but was rich in crystals of leucin and tyrosin, with a few disorganized liver-cells. Unfortunately, no cultivation-experiments were made, so that it is impossible to say whether streptococci were present or not.

On September 24th, the patient being under the influence of chloroform and morphin, an incision, parallel to and two fingerbreadths below the costal margin, was carried over the most prominent part of the swelling. This was rapidly deepened, and adhesions were soon discovered, uniting the liver and the abdominal wall. A scalpel was passed into the abscess-cavity, and an incision made in the walls large enough to admit two fingers. The pus, which escaped with difficulty on account of its thick, glairy nature, contained numerous pieces of disorganized bile-stained liver-substance, which, when floated in water, showed the interlobular vessels, with parts of two or three hepatic lobules hanging around them. The cavity was thoroughly washed out and drained by a large glass tube sheathed with rubber. The wound was packed with iodoform-gauze, and dressed antiseptically.

The after-treatment of the case was very tedious. In spite of the large drainage-tube, the thick, glairy pus flowed but slowly, and it was found necessary to introduce two tubes, side by side, and irrigate the cavity through them. This acted much better, and the case progressed fairly favorably for three or four weeks, when it was resolved to enlarge the opening to treat the cavity by direct swabbing with sponges. This was done on October 31st, and the recesses of the cavity were gently and thoroughly curetted and swabbed until they were as clean as a healing ulcer. During the curetting the bleeding was very slight and never interfered with a perfect view of the cavity. The cavity was then packed with iodoform-gauze. Still, in spite of careful dressing, no improvement resulted. A copious glairy purulent discharge returned, and the patient contracted a persistent and troublesome diarrhea, which caused great emaciation. He slowly but surely sank, dying on January 7, 1893.

CASE II.—Adolphe B., aged sixty-three, a native of France, who had lived in Galveston for three years, was admitted under my care on February 18, 1893, complaining of pain in his abdomen. He was a man of slow intelligence, and little could be elicited either as to his previous history or as to his present condition. He complained vaguely of pain in the right side of the abdomen, but could not

[1] Read before the Southern Surgical and Gynecological Association, at New Orleans, 1893.

definitely locate it. A large reducible inguinal hernia was present on the right side, but this evidently had no bearing on the case. The temperature was of a remittent type, without rigors, reaching in the evening 102.8°. Inquiries were made as to malaria, and the blood was several times carefully examined, but with negative results. The pain still continued, and in the course of some seven or eight days declared itself more definitely in the lower part of the right chest. Examination of the lungs revealed nothing. There was no increase of liver-dulness, either upward or downward, and no tenderness on pressure over the right lower costal zone. The patient denied ever having had dysentery, and at this time there was no evidence of it; but later on, when the diagnosis was certain, I learned that he had been treated for amebic dysentery during the previous summer.

The temperature and pain still persisted, and in a little time definite physical signs became apparent. The right lower costal arch became fixed, not moving with respiration; it bulged somewhat, but not perceptibly more than the costal arch of another thin, healthy patient who was examined for the sake of comparison; but an important sign appeared in a spot of edema in the anterior part of the seventh intercostal space. The needle of an aspirator was inserted at this spot, and when at a depth of one and a half inches pus was obtained. This was thick and curdy, and contained numerous amebæ possessing active movements. Operation was performed on the following day, the patient being under the influence of chloroform.

I made a four-inch incision along the line of the seventh intercostal space, having its center over the edematous spot. This was deepened, and the anterior extremities of the seventh and eighth ribs and parts of their costal cartilages were excised, the pleural cavity being opened in the process. No retraction of the lung occurred, but the upper surface of the diaphragm projected into the wound. An incision parallel to the skin-incision was now made through the pleural covering of the diaphragm, and this was raised up with the handle of a scalpel and stitched accurately to the parietal pleura, thus shutting off the pleural cavity from that of the wound. The diaphragm was now incised, and a few strokes of the knife revealed adhesions between its under surface and the convex surface of the liver. A trocar and canula were thrust into the abscess-cavity, and a scalpel passed along the trocar, making an opening into the abscess capable of admitting two fingers. The pus, which was thick, flowed slowly through the opening. About fifteen ounces of purulent fluid were evacuated, which contained masses of liver-substance and myriads of amebæ. The opening was enlargd carefully until a sponge was inserted, by means of which every crevice was thoroughly cleansed. Two large, long, glass drainage-tubes, sheathed with rubber, were inserted into the cavity, and the operation-wound closely packed with iodoform-gauze. The effect of the operation was immediate, and the patient soon recovered from his collapsed state. The cavity was irrigated continuously with boric-acid solution from the first, and there was never any trouble with the apparatus.

On the fifth day after the operation, as the pus that came away still contained living amebæ, I substituted a solution of quinin sulfate (1:1000) for the boric acid. The effect was marvellous: the temperature fell, remaining practically normal thereafter; the pus diminished in quantity, and for a few days contained dead amebæ, but after this what little pus was discharged contained no amebæ. The wound healed, and the patient is now entirely cured.

The diagnosis of hepatic abscess may be the easiest possible, or beset with numerous difficulties. Occasionally we can only suspect its existence from such symptoms as pain and elevation of temperature, the other signs being bulging of the lower costal zone and dyspnea; enlargement of the liver may be imperceptible, even to the most accomplished diagnostician. It is in the latter cases that most of the difficulty of diagnosis arises, and it would be better in cases in which there is persistent elevation of temperature and pain in the region of the liver, if the lungs are free from disease, to proceed to puncture of the liver with an exploring-needle. Early and complete exploration is a harmless procedure, and would be the means in many cases of discovering abscess-cavities before they had attained a great size. But this exploration is occasionally fallacious, for an abscess-cavity of fair size may be present and puncture will fail to detect it. This has often occurred, and is usually due to one of two reasons:[1] either because the contents are too thick to run through the needle, due to caseation of the pus, or due to the naturally thick nature of the pus in the early stages of amebic abscess, or[2] the cavity has been missed by the needle. This occurred in Quénu's case;[3] the liver was exposed by an abdominal section, and explored in all directions without finding pus. A few days afterward the autopsy revealed an absces-cavity containing two liters. Even when pus is discovered by the aspirator, the diagnosis from other inflammatory affections in the neighborhood, such as "basal pyothorax" and "subphrenic abscess," may be difficult; and although in the majority of cases by careful attention to detail we can avoid such mistakes, still, occasionally, even in the hands of skilled diagnosticians, such faults have occurred.

The physical signs of the three affections are very similar, and in many cases those of subphrenic and hepatic abscess are identical. Careful microscopic examination of the pus will sometimes clear up a

[1] Dabney: Study of Hepatic Abscess. American Journal of the Medical Sciences, No. 244, p. 144.

[2] Councilman and Lafleur.

[3] Quénu: Société de Chirurgie, 1891. Quoted by Leblond: Abcès du Foie. Paris, 1892.

doubtful case, as the presence of liver-cells is always conclusive of hepatic abscess.

If pus be discovered, and its hepatic origin found, the next question that presents itself to a practical surgeon is as to operative interference.

Now the presence or absence of adhesions of course makes a great difference in the immediate mortality, for, if present, there is no danger of infection of either pleural or peritoneal cavity. Adhesions can never be diagnosticated with absolute certainty, but there are certain signs that, when present, render it extremely probable that they exist. These are: the presence of edema in the abdominal or thoracic wall; absolute fixation of the liver to the parietes, as shown by its non-descent during inspiration; and the presence of pus at a small depth from the surface. Nevertheless the absence of adhesions ought not to influence a surgeon in the slightest degree as to the propriety of speedy evacuation of the abscess-cavity. One knows the rapidity with which some of the abscesses form, and their liability, after reaching a certain size, to burst into various cavities and organs. Therefore, as even twenty-four hours may be too long a time to wait, no surgeon should hesitate to proceed to evacuation because no adhesions exist. It seems to me an axiom that "in abscess of the liver, whenever the diagnosis of pus is made, the only proper treatment is by early and large incision."

On reviewing the older methods of operation, it appeared to me that they group themselves into two main divisions: 1. Those in which the abscess-cavity was treated by aspiration, or a modification of this in which various forms of trocars and canulæ were employed. 2. Those in which a more or less free incision was used.

In considering the first class, we are necessarily struck by the fact that aspiration has been credited with many successes. This is, of course, not surprising, as it is the result of experience that aspiration of abscess-cavities elsewhere has also resulted in some successes; but, because we get an occasional cure by aspiration, does it follow that this must necessarily be the proper method? Do we follow such a line of reasoning in tuberculous cavities, and in pyothorax? When one considers the thick character of the pus in most hepatic abscesses, it can only be a matter of wonder that aspiration has been as successful as is reported. The introduction of a large trocar and canula is less objectionable, but even here we run a great risk, for although for a time the sides of the puncture press closely upon the canula, and prevent extravasation, in a short time pus may escape alongside the canula and infect the peritoneal cavity. To avoid this contingency, Macleod [1] arranged an ingenious apparatus whereby the canula was withdrawn and a rubber-drainage tube, tightly stretched, left in its place. The drainage-tube, which had side openings only at the inner end which lay in the abscess-cavity, was released, and resuming its normal diameter completely filled the channel previously occcupied by the canula; the rubber pressed on the sides of the wound, and prevented any extravasation into the abdominal cavity. This operation has been very successful in Macleod's hands, and is certainly the best of its class.

In the second class of operations, in which an incision was employed, we find many curious methods, some of them carefully guarding against serous infection, others blindly ignoring all surgical principles. Recamier [1] opened the abscess in two stages. His incision went through all structures as far as the parietal peritoneum; then, packing the wound, he waited until adhesions had formed, when the abscess-cavity was opened. Begin [2] cut through the parietal peritoneum; and then, placing an antiseptic plug in the wound, waited until adhesions had formed around the opening. Another crude method was to incise down to the parietal peritoneum, and then to complete the process gradually by caustics placed in the wound. Adhesions formed, and in many cases the abscess opened spontaneously.

Little [3] planned an operation, the chief merit of which consists in its boldness. Having determined the presence of pus, a bistoury was passed along the needle of the aspirator, and, in defiance of anatomic conditions, a free opening was made, through which the abscess was evacuated. The number of successes obtained by this method is marvellous, and can only be explained by the presence of adhesions in the majority of the cases operated on. Defontaine [4] found five cases in which this method had been used and in which it was proved that no adhesions existed. Of these, three died, the cause of death in two being peritonitis. He said, in reviewing this method, that a single death from this cause ought to be a death-blow to the operation. The more scientific operations are of recent date, and, like those for the radical cure of hernia, depend more on anatomic knowledge and surgical skill than on chance. Whether the abscess lies under the thoracic or abdominal walls, the incision is made methodically through all of the layers, and each cavity is dealt with in such a manner as to shut it off from all chance of infection.

I. *Cases in which the enlargement of the liver is abdominal, and no adhesions exist.*

For a long time it was doubted whether, with any

[1] Macleod: Brit. Med. Journ., 1891, vol. ii, p. 1345.

[1] Recamier: Leblond, loc. cit., 89.

[2] Begin: Gazette des Hôpitaux, p. 535.

[3] Described by Ayme: Archives de Méd. Navale, 1880, vol., xxxiv, p. 525.

[4] Leblond: Loc. cit., p. 98.

degree of certainty, the liver could be stitched to the abdominal walls, but when the fact was demonstrated a way was at once opened for the treatment of both hydatid cysts and hepatic abscesses. Horner[1] first performed the operation, and was soon followed by Bouilly; and then McLane Tiffany conceived the idea of detaching the edges of the parietal peritoneum for some distance, and uniting them to the convex surface of the liver. If this separation is done with care, the two edges of the peritoneum hang like a curtain, and can be sutured to the liver, their length of pendulousness allowing free respiratory movement without dragging on the stitches.

When the hepatic enlargement is abdominal, we open the cavity and expose the liver. The organ is carefully examined and inspected, and in one case[2] the presence of a second abscess was determined. The peritoneum should be detached from the edges of the incision for some distance, and united by points of suture with the surface of the liver, leaving a sufficiently large space for the proper evacuation of the abscess-cavity. The sutures require careful manipulation, and there should be at least two concentric rings. The peritoneum should also be long enough to allow for the respiratory movement of the liver without undue dragging on the sutures. Occasionally the abscess has been evacuated before applying the stitches. In this case the sutures should pass through a fair thickness of liver-wall, but should not touch the abscess-cavity. It is, however, better, unless there are urgent reasons to the contrary, not to open the abscess-cavity immediately, but to aspirate and allow time for adhesions to form before proceeding to thorough evacuation.

II. *Cases in which the enlargement of the liver is upward toward the thoracic region.*

In these cases the transpleural incision is undoubtedly the best. First proposed in 1886, by Knowsley Thornton,[3] it has since been successfully carried out by many operators.[4] Thornton excised the seventh and eighth ribs, opened the pleural cavity, elevated the diaphragmatic pleura and stitched it to the parietal pleura, incised the diaghragm, and opened the liver-abscess without taking any precautions against peritoneal infection. Terrier planned what must be considered a perfect operation. An incision eight centimeters long was made in the eighth intercostal space, the ninth rib resected for an extent of four centimeters, the pleural cavity opened, and the diaghragmatic pleura stitched to the parietal pleura. The diaphragm was incised and the lips of the wound united to the liver by silk sutures, thus forming a channel passing from the surface of the body which had no communication with either pleural or peritoneal cavity. The abscess was then opened with a bistoury and drained. This method of Terrier[1] is undoubtedly the most perfect. It has a faultless technique, and has yielded good results.

Some objections may be raised to this transpleural method on account of the immediate danger of collapse of the lung, and the more remote danger due to infection of the pleural cavity. Collapse of the lung is not likely to occur. It was not noticed in Terrier's case or in my own, and further, in many wounds of the chest the lung fills the pleural cavity, in spite of a large opening. Even if collapse did occur, I think it would be temporary only, unless fluid collected in the pleural cavity. The later dangers, such as pyothorax and pneumonia, depend upon the completeness with which the technique of the operation is carried out.

In conclusion, I should like to mention a few points on the treatment of the cavity after the contents have been successfully removed.

It is often exceedingly difficult to obtain free drainage, even when large tubes are employed. In some cases even swabbing the walls of the cavity is ineffectual, and these cases are practically hopeless, owing perhaps to inherent tissue-weakness. I tried curetting in one of my cases, and although I removed, as I thought, all necrotic tissue, still in a few days the cavity was as bad as before. Continuous irrigation often affords a means of efficient removal; but the tubes have an aggravating habit of being blocked, necessitating frequent changing and cleaning.

Irrigation with a solution of quinin sulfate—1:1000—was in one of my cases remarkably successful, and although the improvement may have been a coincidence, and not a *post hoc ergo propter hoc*, I think that in cases of amebic dysentery at least it deserves a fair trial.

[1] Leblond: Loc. cit., p. 102.

[2] Thornton: Quoted by Greig Smith. Abdominal Surgery, 1889, p. 581.

[3] Thornton: British Medical Journal, 1886, vol. ii, p. 901

[4] Leblond: Loc. cit., p. 113.

THE INTERRUPTED HIGH-VOLTAGE PRIMARY, OR MIXED, CURRENT.

By GEORGE J. ENGELMANN, M.D.,
of St. Louis.

The interrupted high-voltage primary or mixed current is one of the results of experiment with my new independent interrupter, devised for my faradic apparatus, but to be used also in connection with any galvanic and faradic apparatus; it has proved to possess an individuality peculiar to itself and of great physiologic efficiency, so that I am convinced of its therapeutic value and present it for the consideration of the profession.

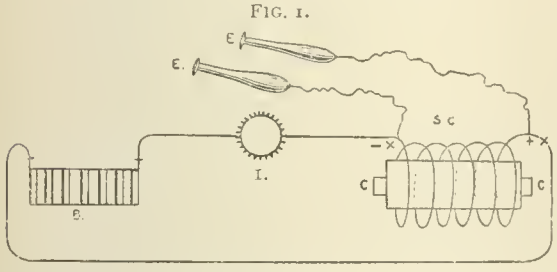
[1] Terrier: Observ. par Dagron, Soc. Anat., 1890, p. 44; Leblond, loc. cit.

This current, which I term the *interrupted high-voltage primary*, or *mixed*, current, is obtained by the interruption of the galvanic flow passing through the secondary coil of the faradic apparatus, and is taken from the terminals of that secondary coil, here used as a primary, which is of higher voltage, of many more winds and greater resistance than the ordinary primary in medical induction-instruments.

The current so obtained is hence not precisely identical with the primary faradic, and may properly be termed a *mixed* current, if not an *interrupted* primary of higher voltage.

A well regulated, controllable interruptor is above all necessary.[1] Any galvanic battery may be used; one pole is connected with the interruptor, and through this to one of the terminals of the secondary coil of the faradic apparatus[2] (the binding-post from which the secondary current is taken); the other pole of the galvanic battery is connected directly with the remaining terminal of the secondary coil, and with these same two terminals the rheophores carrying the electrodes are connected.

FIG. 1.



B. Galvanic battery. I. Interrupter. S.C. Secondary coil —X and +X. Terminals of coil. C. Core and primary coil. E. E. Electrodes.

A current so produced combines the characteristics of the galvanic and the induction flow; it has the same galvanometric quantity and the same chemic effect as a simple galvanic current of the same intensity, or, from the same number of cells applied in the same manner *plus* the voltage and the physiologic effects obtained from the winds of the coil; coil and patient being connected in multiple, the resistance is diminished and the current increased, but increased in voltage rather than ampèrage—converted, I may say.

The *physiologic effects are peculiar*, and differ materially from those of any other form of electricity in medical use, the current combining, as it were, the quantity and chemic effect of the galvanic with the voltage of the faradic; the effects resemble most nearly those of the primary faradic, but are more powerful and indicative of greater quantity, most marked in their *action upon muscular fiber*, which is affected by this *as by no other form of electricity*.

A variety of effects are produced by the use of different current-intensities and different coils; yet while this current will undoubtedly be of distinct value in certain nerve-lesions, it will prove pre-eminently a *muscle*-current, as it contracts the muscle most perfectly, acting upon every fiber in the most marked manner, like a powerful interstitial or intercellular massage.

The character and effect of the current depend upon the following elements, which must be noted, as it is by a variation in these factors that the varying therapeutic results are obtained:

1. The number of cells or intensity of the primary battery-flow.
2. The resistance and number of winds of (the secondary) coil.
3. The number of interruptions.
4. The position of the secondary coil in reference to the core and primary.
5. The character and location of the electrodes.

1. The number of cells used or the intensity of the primary battery-flow determines the galvanometric measure and chemic effect; these being the same as from an ordinary galvanic current without insertion of the coil and applied in the same manner, it is evident that the character of the current must in a measure depend upon this factor; but as voltage and induction-effects are prominent, the number of cells to be employed is determined, not by the chemic effect to be produced, but by the coil to be used. Only one cell can be employed in connection with a short coil, the number of cells being increased with the resistance and number of winds in the coil; but more than ten or twelve cells, if in good condition, can hardly be used to good advantage, even with the long fine coils, at least on healthy tissues.

2. It is the coil preëminently which determines the character and effect of the current,[1] the resistance and

[1] For slow interruption, simple muscle-stimulation and massage, the interrupter ordinarily connected with a complete galvanic apparatus may be used, or, for rapid interruption, a commutator attached to the shaft of a motor, but precision is necessary, and ere long the perfected instrument, which has been devised and constructed by Messrs. Waite & Bartlett in accordance with my suggestions, will be in the hands of the profession, and accurate work, record, and comparison of results will then be possible.

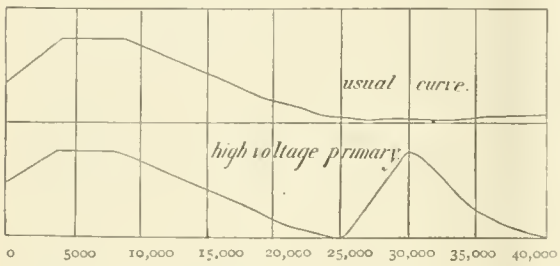
[2] Not every faradic apparatus will answer, as most instruments have but a single coil and this may give a very unsatisfactory mixed current. To obtain the various therapeutically serviceable phases of this current an induction-apparatus, with a graded set of coils, is necessary; but if it has but one secondary coil it should be of approximately 1800 W. and 13 ohms R., or of about 800 feet of 22 wire, as this develops the most generally useful form of the interrupted high-voltage current, the painless muscle-permeating current.

[1] In speaking of *the coil*, I invariably refer to the *secondary* coil of the faradic apparatus, in position on the instrument, *used as a primary* in this circuit.

number of winds materially varying its physiologic value, but not in precisely the same manner as when used as a secondary in the faradic current proper. The faradic current from a coil of high voltage, or many winds, has *least* quantity, whilst the mixed current from this coil is of necessity one of *greatest* quantity.

The lower the resistance of the coil and the less the number of winds, the more powerful the induction-effect and the less the quantity of the primary galvanic force to be employed: No. I coil (Engelmann), 0.8 ohms R., 528 winds, has an effect, both motor and sensory, too powerful for therapeutic use, even with one single cell of the weakest Leclanché.

Fig. 2.



No. II, the medium coil, 13 ohms R., 1750 winds, with one cell from any galvanic battery, produces the most satisfactory, deep, muscle-contracting currents, permeating every fiber. This is, *par excellence*, the coil which gives value to the current, and it is remarkable how completely it can be confined to a distinct muscle by the location of the electrodes; whilst permeating its fibers it does not seem to radiate beyond.

For the developing of the most satisfactory results, the number of cells used must be increased with the resistance and number of winds in the coil:

	Feet.	Wire.	Winds.	Number of cells found to be effective.
For a coil of	1500	36	4,000	4 to 5
" "	3000	36	7,000	7
" "	4500	36	10,000	9 to 11

By longer coils muscular contractions are likewise produced; but these are more painful, and the chemic effects of the galvanic current begin to assume prominence; these should prove efficient for other therapeutic purposes, when more marked galvanic effects are called for.

3. Change of relation between the secondary coil and the primary coil and core, *i. e.*, the moving to and fro of the coil on the scaled slide, varies the intensity of physiologic effect. This variation of intensity is similar to that of the primary faradic, but differs in some features; if coils of low electromotor force are used, the intensity of physiologic effect is increased by a sliding out of the coil away from the core; this is most marked in the coil of fewest winds, coil I, 528 winds; somewhat less so, but still very decided, in coil II, 1750 winds, 13 ohms R.; coils of higher E. M. F., longer; fine-wire coils, on the contrary, *weaken* the current-effect by the drawing out of the coil, or the moving away from the core; this is true, even of the coil of 1500 feet, or 4000 winds, and of the muscle-coil of fine wire in multiple, 6500 winds, and only 4 ohms R.

The true primary coil of the apparatus is ignored in these experiments, and its terminals are not connected. When this is done it acts as a damper, like the copper tube of Duchesne, to weaken the current.

4. The number of interruptions, or the rates of vibration, control the physiologic effect of this current, as they do that of the faradic, whilst the chemic and galvanometric action is affected but little and that in a contrary sense.

Interruption and alternation affect the physiologic action of this current in the same manner, but I shall speak only of interruption, pure and simple, as it is the interrupted primary which will prove of greatest therapeutic value, this being more agreeable, less painful and harsh than the alternating, and equally, if not more, efficacious as a muscle-contractor, so that the alternating primary will only be used when it is of importance that all chemic action be avoided. Both currents, interrupted and alternating, will respond to certain therapeutic indications; but as a simple muscle-contractor the more irritating and disagreeable alternating will find little favor as compared with the interrupted current; both, however, respond in precisely the same way, as regards physiologic effect, to variation in the rate of interruption.

Other conditions being equal, the same number of interruptions and alternations produce the same effect, *i. e.*, 10,000 interruptions have the same comparative effect as 20,000 alternations upon the current. As in the secondary faradic, the effect of the current increases with the rapidity of interruption from 1 to 2500 or 3000 per minute, and, after attaining a maximum effect, decreases with increased rapidity of interruption until a rapidity is reached with which all sensation ceases. Though the galvanometric effect is unchanged, the chemic effect increases; the more intense the current the greater the number of interruptions necessary to completely annul its effect.

Coil I, heavy, with one cell, causes powerful and painful contractions, too violent for general use with the ordinary rate of interruption; yet it ceases to have any effect, or to be felt, with 14,000 interruptions per minute (this when full in, over core, with small sponge electrodes to upper and lower

arm, the effect depending greatly upon the moisture of the electrodes and the pressure upon them).

The 10,000-wind coil, 4500 feet of 36 wire, 11 cells, sponge electrodes to upper and lower arms, ceases to be felt at 25,000, whilst if only 7 cells are used, the same result is accomplished by 20,000 interruptions per minute.

The general law mentioned, of increase of effect with increase in rapidity of interruption, then decrease with still greater rapidity, holds good with one curious exception, true of the secondary faradic, as it is of the interrupted, or alternating high-voltage primary; and this interesting phenomenon, which merits a more thorough discussion elsewhere, I must here at least note: it is that currents from certain coils, as far as I have observed, from 5000 to 10,000 winds, 36 wire, under certain conditions, after passing that rapidity of interruption at which they cease to be felt, *reappear* with greater rapidity, again *attain the previous maximum*, to again lose all effect with still greater frequency of interruption. In place of the simple rise and fall, there is a second shorter and additional curve of rapid rise to the previous maximum and fall to zero.

The 36-wire coil of 10,000 winds, with 11-cell primary galvanic force, ceases to be felt with 25,000 interruptions, then reappears, regains its previous efficiency at 30,000, and again weakens as the interruptions grow more rapid, to completely fade away as they attain a speed of 40,000 per minute; if fewer cells are used with the same coil, precisely the same phenomenon is observed, the same effects being produced by lower rates of interruption as the current is weaker.

5. That the character of the electrode, which determines penetration and surface-resistance, influences this current, as it does both galvanic and faradic, need hardly be mentioned; material, size, degree of moisture, location, and pressure upon the electrode, all serve to vary the sensation and effect of the current, and must be considered as determining factors.

This interrupted, high-voltage primary current possesses an individuality which must secure it a distinct place as a therapeutic agent; by blending the quantity and chemic action of the galvanic with the voltage and mechanical effects of the faradic we are enabled to produce peculiar effects; yet both are so modified that the resultant differs from a simple combination of these two forms of electricity. It differs from the painful interrupted or alternating galvanic as it does from the ordinary faradic, the secondary or induced current, and it will be resorted to when deep, penetrating effects are desired and when permeating muscle-currents are indicated; it will act, I believe, in those cases in which faradization fails. No other current, with such penetrating power, can be so localized and grasp every fiber of a muscle as does this.

Therapeutic effects I have not, as yet, been able to test, and cannot speak of its action upon muscle in central and peripheral lesions, but physiologic experiment indicates the powerful influence of this current, from proper coils, upon contractile tissue, and it is in this direction that investigation must first proceed.

In conclusion, a word of caution to the operator: Care must be exercised in the selection of battery-force and coils until a knowledge of the current and its effects is obtained. It is best to begin with the use of the lowest current-intensities, or the fewest galvanic cells which will take effect through the coil employed, or to use the number of cells here indicated as suitable for the various coils, varying the current by the pushing in or out of the coil, as the case may demand; when familiarity with the current has been acquired, this may be varied by variation in the galvanic flow for certain effects. It must be remembered that coils of low E. M. F., heavy coils of few winds, must be *drawn out* to *increase* the physiologic effect, whilst coils of higher E. M. F., the long, fine coils, vary less and in a different manner; these *weaken* by *drawing out*. It is also important to remember that the current-effect increases more distinctly than that of the faradic, with increase in the rapidity of interruption up to 3000 per minute, and, after attaining a maximum, gradually decreases with increased rapidity, decreasing in proportion to the current-intensity; the stronger the current the greater the number of interruptions necessary to reduce it.

A note must be made of the peculiar effect of fine-wire coils of from 5000 to 10,000 winds, which again attain a brief maximum intensity with increase of interruption after having been obliterated by a certain rapidity.

It is evident that this current is one easily obtained if a proper interrupter and a coil of suitable construction are available, as a single galvanic cell, Leclanché, Gonda, dry or red acid, will answer for use with the muscle-coil, the galvanic battery, or a larger number of cells, being needed only with the longer coils, which are not as generally useful.

I trust that an earnest trial will be given the interrupted high-voltage primary, which merits a place in our therapy, if only for its permeating muscle-effects, and I am convinced that therapeutic use will soon demonstrate the greater range of this efficient current.

The International Medical Magazine will hereafter be edited by Dr. H. W. Cattell, under the supervision of Dr. John Ashhurst, Jr., and Dr. James T. Whittaker.

SUPRA-PUBIC CYSTOTOMY.[1]

By B. W. TAYLOR, M.D.,
of Columbia, S. C.

I. FOR VESICAL CALCULI.

It appears that supra-pubic cystotomy was first performed by a French surgeon, Peter Franco, in 1541, upon a boy who had a large calculus, very prominent above the pubes, but which could not be pushed down in the bladder so as to be felt in the perineum. When we take into consideration that the bladder in the child is much higher than in the adult, we will perceive why the calculus was so easily felt above the pubic bone. Notwithstanding the success attending this case, the operation was not favorably thought of by the profession, and it was not until 1580 that François Boussett again revived this operation and saw the necessity of distending the bladder with a bland solution and compressing the penis to prevent the escape of the injected fluid. He also retracted and protected, with the forefinger, the peritoneal fold during the incision of the bladder. Thus two important steps in the operation were discovered, and from that day to this these precautions have been carried out.

Fr. Côme, who lived about 1779, repeatedly performed this operation with success by passing into the bladder a sound with a concealed dart, the finger then being introduced into an incision made in the abdominal wall just above the pubes, and the sound being felt against the finger, the dart was protruded. A bistoury was then passed along the dart as a guide, the opening was enlarged and the finger introduced into the bladder. Côme also recommended the perineal incision for the purpose of drainage in cases of the supra-pubic operation.

The London surgeons also performed this operation successfully, but the danger of wounding the peritoneum, which was much feared in those days, most probably caused the operation to be given up.

In 1878 Dr. Garson discovered that by distending the rectum with an inflated rubber bag and at the same time distending the bladder with fluid, the latter could easily be opened without endangering the peritoneum, which would thus be about two inches above the pubic bone.

At first this discovery did not seem to favorably impress the profession; but several years afterward Prof. Petersen, of Kiel, performed several operations and showed the advantages of rectal distention.

We have thus traced the evolution of the operation as now performed, antiseptic precautions, of course, being rigidly carried out.

We will now compare the results of the several operations for the removal of stone from the bladder.

[1] Read by title before the Southern Surgical and Gynecological Association, November, 1893.

The mortality of litholapaxy, as given by Sir Henry Thompson in 1890, was a little over 3.5 per cent.; and by Keyes in 1885 as 3.7 per cent.

It appears at present that litholapaxy gives better results than any other operation for stone, but it requires more skill and experience, and the instruments required are expensive. Litholapaxy will therefore seldom be performed except by specialists.

In perineal lithotomy the possible complications that may occur during the operation, but which are avoided in supra-pubic lithotomy, are:

1. Failure to enter the bladder, especially in children.
2. The incision of the body of the bladder in adults with large calculi.
3. Wounding the rectum.
4. Rigidity of the neck of the bladder.
5. The enlarged lobe of the prostate interfering with the seizure of a stone in an abnormal position.
6. Failure to find the stone.

The possible after-complications of perineal lithotomy that are avoided in supra-pubic lithotomy are:

1. Retention of urine.
2. Epididymitis.
3. Orchitis, due to wounding the seminal ducts, or subsequent inflammation near their orifice.
4. Incontinence of urine, which McGuire says never occurs in the high operation.
5. Impotence and sterility.
6. Terminal fistula.

The complications and accidents peculiar to supra-pubic lithotomy are:

1. Rupture of the bladder during preliminary distention, which I think must occur but rarely with skilled operators.
2. Infiltration of the wound from bad drainage. As to this, McGuire says: "It is more complete than in drainage after section through the perineum. If hemorrhage occurs it can be seen from whence it comes and it can be more easily controlled than in perineal lithotomy."

The operation is simple and far less dangerous than any cut in the perineum. If a fistula is left it is above the pubes and is not constantly leaking. Lydston mentions a case in which a tube was introduced in the bladder through the perineum and another through the supra-pubic opening, drainage taking place where there was the least resistance, namely, above, and not one drop of urine passed out through the perineum.

Cabot lays down the following cases as unsuitable for litholapaxy and perineal lithotomy:

1. Large and hard stones.
2. Stones with a nucleus of a foreign body too hard to crush.
3. Encysted stone.
4. Ankylosis of the hip.

5. False passage of the urethra.

Up to the present time, although supra-pubic lithotomy has so many advantages over the perineal section, yet the published statistics give the latter a lower mortality. This, I think, is in part due to the unwillingness of surgeons to give up lateral perineal incision, which has given such results as Freyer has achieved, of operating on 143 boys without a death. Assendelft, a Russian surgeon, has performed supra-pubic lithotomy on 102 patients, varying in age from five to twenty-eight years, with 2 deaths. These figures, of course, do not give the mortality of patients of a more advanced age, for whom the death-rate is necessarily greater.

I will now give the histories of two cases I lately operated on.

Case I.—J. W. T., nineteen years of age, had attacks of renal colic for six years. About two years before the operation he was very ill for several days, when a calculus passed into the bladder and a free discharge of pus from the penis. It was a short time after this that symptoms of stone in the bladder developed. The supra-pubic operation was performed with the usual technique. The peritoneal fold was lifted up with the finger. The rubber tubes placed in the bladder were removed early, as they caused much irritation. Some urine passed from the penis in eight days, the greater part being passed through the wound until the eleventh day, when the incision closed up. There was no rise of temperature.

Case II.—L. A. W., forty-three years of age, had attacks of renal colic for seven years, some of the stones being voided with the urine. Four years before the operation the first symptom of stone in the bladder showed itself. The man was operated on by the supra-pubic incision. The peritoneal fold was never visible. He had no pain or rise of temperature after the operation, and was allowed to go to his home, twenty-five miles away, in twelve days. He urinated naturally in twenty days, and in thirty days the wound had healed entirely. He has been well ever since.

In appropriate cases I would advise closing the bladder at once by the interrupted Lembert suture of fine silk, the incision being held close together by a suture of silk at each end of the wound in the bladder. These stitches, of course, must not penetrate the mucous membrane of the bladder. A small drainage-tube is introduced at the lower part of the parietal wound, which is then closed. Remove the tube in forty-eight hours. The urine is drawn off by a soft catheter, if necessary, no other provision for its removal being required.

II. FOR ENLARGED PROSTATE.

The operations of Gouley and Mercier for incising or removing a portion of the bar in senile enlargement of the prostate without opening the bladder has been given up by most operators on account of its dangers and the uncertainty of the results.

The object of all operations performed in cases of hypertrophy of the prostate is to effect free drainage and give the bladder complete rest. Then, again, the obstructing portion of the prostate is removed, so that, when the wound heals, the patient can again perform micturition normally.

Now, when we drain the bladder through a perineal wound, the urgent painful symptoms are relieved only so long as the opening remains unhealed. When it closes, the same symptoms, after a time, return. This operation fails to relieve the existing obstruction in a large number of cases. McGill, of Leeds, says that in only three among twelve cases, in which he operated by the supra-pubic method, would it have been possible to remove the growth through the perineum.

McGill was the first to show the great advantage of the supra-pubic operation for removing prostatic obstruction, and the series of cases published by himself and Keyes, of New York, has caused the operation to be considered superior to the perineal section.

McGill says "that the severity of the symptoms in a case of hypertrophy of the prostate bears little or no relation to its apparent size, as felt through the rectum; and it is also well known that a considerable number of men of fifty-five years and upward have prostates of abnormally large size, though of these only a certain proportion, say 50 per cent., suffer from urinary symptoms. This strange difference depends on the point at which the organ is enlarged. Prostates projecting toward the rectum and perineum cause no urinary trouble, while severe symptoms may supervene when the prostate, on rectal examination, is apparently of normal dimensions."

When, therefore, we consider that, before opening the bladder, it is impossible to say what is the condition of the entire vesical projection, the perineal operation appears to be most uncertain in its result.

I shall not describe the various prostatic growths, but will refer to only one variety, as the case I report was of that character, viz., a uniform circular projection, surrounding the internal orifice of the urethra. It surrounded the urethra like a collar and projected for a variable distance into the bladder. McGill says that, when the bladder contracts on its contents, the contained fluid is forced on the projecting prostate and the urethral orifice is closed. The mechanism is the same in all varieties except one. The patient, finding he is unable to relieve himself, ceases to strain and the urine flows away in a full stream. After a time the bladder still contains urine, but no more can be forced out; then begins self-catheterism, which, in many

cases, is all that is needed. McGill says that when in these cases an operation is demanded the supra-pubic method is superior to the perineal for the following reasons:

1. It is more generally applicable.

2. It can be performed with greater precision and completed with greater certainty.

3. It insures complete and most efficient drainage.

4. It is equally safe, although there are no statistics available.

As to the final results, we may say that even in cases in which the prostatic retention was of long duration, there are many patients in whom the bladder has, since the operation, been able to expel its contents. This has occurred even in cases in which self-catheterism had been practised several times a day for years.

Then, again, there are cases in which it is necessary to keep the supra-pubic incision open for the rest of life. This fistula, when reduced to the size of the natural urethra, does not permit leaking or dribbling of water, unless the bladder is allowed to become too full. Dr. McGuire wrote me the following with regard to the after-treatment of the case I will later report:

"In the formation of an artificial urethra for prostatic obstruction, I let the wound heal until it admits a No. 8 catheter, American scale; then a plug should be introduced into the tract and retained there by a band passed around the pelvis. When the patient wants to relieve himself the plug is removed and the man voluntarily expels the urine through the opening. Immediately afterward the plug is replaced and worn until the desire to make water returns. It is not necessary that it should be worn constantly, if it creates any irritation, but I have seen the artificial tract close up in a night.

"To siphon the bladder out with a catheter will produce atrophy of the bladder; and unless this exists before the operation, it is not necessary to use a catheter or any tube to draw off the water. He ought to keep open, the rest of his life, the artificial urethra."

I will now give the history of a case:

Mr. R., aged seventy-six years, has had piles for forty years. About six years ago he had retention of urine and was sick six weeks, the urine being drawn off by catheter a part of that time. He then remained comparatively well for a year, when trouble again occurred. It was not until three years ago that it became necessary to draw off his urine daily. During this time he has twice had retention of urine, with painful distention of the bladder. It was found impossible to introduce a catheter until the bladder was aspirated. The calls to urinate during the last three months have at times been as frequent as every hour, with straining and protrusion of the piles, which had to be replaced by the hand with a good deal of pain. For one month before the operation it was found necessary to keep a No. 8 silver catheter in the bladder most of the time, as it was impossible to use the soft rubber catheter, which he had up to that time introduced. For a long time he refused to be operated on, but as we expected almost daily that we would fail to introduce a catheter, he at last consented.

The bladder was opened by the usual technique and a small phosphatic stone removed. The collar-like protrusion of the prostate of the largest size was found to exist. After incising the prostate in four places the gland was removed by the fingers and the vesical mucous membrane remaining was cut off with scissors. As there was free bleeding a plug of iodoform-gauze, after Keyes' method, was attached to two threads, the one passing out through the urethra drawing the plug well into the prostatic urethra and tied over a similar plug at the external urethral orifice, and the other out through the supra-pubic opening. These remained for twenty-four hours, and were removed. The man showed every evidence of making a slow recovery until the ninth day, when fever with an unchecked diarrhœa set in, and he died on the eighteenth day after the operation. This patient was really worn out by his disease before the operation. His kidneys were seriously affected, mechanical obstruction to the passage of urine having ended in cystitis, ureteritis, and pyelitis.

Christopher Heath, in reporting an operation for stone by the high method, in which chronic cystitis existed, says that he applied to the lining membrane of the bladder a solution of silver nitrate, 20 grains to ℥j of water through a vulcanite speculum. This treatment almost immediately changed the alkaline and offensive urine to an acid and comparatively healthy secretion.

Now the question might be asked: Would it not be good surgery, in such advanced cases as this, for us only to make the supra-pubic incision and apply the solution of nitrate of silver to the lining membrane of the bladder and form a urinary fistula; then, when the patient has regained his strength and the cystitis has improved, to perform a second operation for removal of the prostatic growth? Under the circumstances would we not avoid making a fresh wound in a highly septic cavity and substitute a minor operation for a more serious one?

I have been induced to speak of this operation in order to popularize it, as I believe it is the simplest and best cutting operation for stone and the only operation for the removal of prostatic enlargement in two-thirds of the cases, as well as the only one by which tumors and ulcerations of the bladder can be properly treated.

Fehling, of Basle, has been elected Professor of Gynecology and Obstetrics at Halle in succession to Kaltenbach, recently deceased.

ORIGINAL LECTURE.

PIGMENTATION OF THE WHOLE SURFACE OF THE BODY, OCCURRING SUDDENLY OURING THE TREATMENT OF A CASE OF PSORIASIS; WARTY GROWTHS UPON THE PALMS AND SOLES, FOLLOWING THE INTERNAL USE OF ARSENIC.[1]

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THE case to which I wish to call your attention this morning illustrates three affections of the skin, two of which are of more than ordinary interest. Our patient is thirty-two years old, has the appearance of a man in pretty good health, is a carpenter by occupation, and has a good family history; one brother died at the age of twenty from a disease of the skin that, our patient tells us, had existed from the time he was six weeks old, and which covered the whole surface of the body with thick, white scales. When our patient was fourteen years old his scalp became affected with psoriasis, the lesions itching intensely; at sixteen he had gonorrhea, and has had a urethral discharge ever since. Various remedies were used for the scalp-disease, but without benefit until mercurial ointment was applied; this would keep the disease in check, but did not cure it; it was used for three years, when lesions of psoriasis developed on the body, and the mercury was stopped; six months later the man had an attack of rheumatism that confined him to his bed for nine months.

Three years before his attack of rheumatism he had a hard pimple on the dorsum of the penis that persisted for three weeks; at the same time the inguinal lymphatics were enlarged but not painful. A smooth white scar marks the site of the lesion of the penis. For his rheumatism he was sent to Mt. Clemens, Mich., and after taking the baths for six weeks (during which time he also took potassium iodid), his rheumatism and the cutaneous affection were both apparently cured. A short time after he stopped the baths the eruption reappeared on the body, and with it a chocolate color of the whole surface; so marked was this that he was taken for a mulatto, and on that account he was refused the rent of a house. The pigmentation gradually disappeared from the face, hands, and feet, but has continued upon the other portions of the body up to the present time. Viewing the patient from your seats his skin looks as though a mixture of pepper and salt had been thrown over it. There is no scaling except upon the dime-sized patches of psoriasis that are scattered over the belly, back, and on the inner surfaces of the arms. You will notice that where the psoriatic patches have disappeared their site appears very white in contrast with the pigmented skin; looking a little closer, we find that the discoloration has, all through it, white spots of normal colored skin, varying in size from a pinhead to a pea, and all circular in outline.

Anomalies in pigmentation are not uncommon; you see them in the yellow-brown spots of lentigo upon the face and hands, or in the larger and browner patches, the moth-patches, found on the face, breasts, and abdomen of pregnant women, or in those suffering some pathologic condition of the uterus or its appendages, or in severe cases of pruritus, due to scratching or following a prolonged congestion of the skin. Again, they occur as the remains of the lesions of certain skin-diseases, such as prurigo and syphilis. In most of these instances the pigmentation will disappear in a short time, and the surface covered is not very large. Pigmentation also occurs in some cases of chronic malarial toxemia and in abdominal tuberculosis.

Another cause is found in the local application of certain medicines, or the internal administration of drugs, such as silver nitrate, which in certain individuals produces a chocolate color of the skin that is permanent; arsenic is also followed in some persons by a staining of the skin. Discolorations also occur as a result of the absorption of the coloring-matter of some of the secretions, an example of which is jaundice, as a result of obstruction or of catarrh of the gall-ducts.

Two other diseases that are followed by pigmentation must be noticed, viz., syphilis and disease of the supra-renal capsules, known as Addison's disease.

In Addison's disease the bronze color is not always present; but when it is we find it most marked upon the face and hands, and it is also found upon the mucous surfaces. The disease is gradual in its onset and accompanied by symptoms of severe constitutional disturbance, as manifested by the asthenia, the weak pulse, the gastric symptoms, palpitation on slight exertion, and syncope—symptoms that are referable to the sympathetic nervous system—and the color gradually becomes darker, and is permanent. The disease tends to a fatal issue, death occurring within a few years.

The syphilitic coloring that I refer to is not that which follows the disappearance of a syphilid, but is itself a syphilid—the pigmented syphilid. This is a rather uncommon occurrence, and is seen oftener in men than in women; it is usually seated on the sides of the neck, but may cover larger surfaces, and misses the face and hands; it appears during the first few months of the disease, lasts for several months, and is very rebellious to treatment; it may also occur at a later period of the disease. The patches are circular in outline, yellow-brown in color, and do not scale.

The interesting facts connected with this case are: first, the sudden appearance of the staining, the whole surface of the body being covered in a few days; second, the length of time that it has lasted, now over eight years; and third, the large surface covered.

From the history of the case and the appearance of the patient we are not warranted in ascribing this pigmentation to Addison's disease; the man is in apparently good health; he has none of the constitutional symptoms of disease of the supra-renal capsules; and, more than all, he is alive; the chances being that, with Addison's disease, he would have died several years ago. Regarding abdominal tuberculosis as a probable cause, we are confronted with the same absence of characteristic symptoms; there has been no tenderness of the belly, no enlargement, no anemia, no debility; the family history shows no inherited tendency to the

[1] Clinical lecture delivered at St. Mary's Hospital.

affection, and the pigmentation of this disease is not so pronounced as in our patient, nor so generally distributed.

I do not think that it is the pigmentary syphilid, as it did not occur for over four years after he had the hard pimple on his penis, and he has never had any other manifestation of that disease, neither loss of hair, sore-throat, pains in the bones, eruptions of any kind excepting the psoriatic, and the lesion of the penis may only have been a psoriatic lesion.

Excluding all these diseases from a causative relation to the discoloration, we would probably have to call it a trophoneurosis, which in many instances is as clear as to say that a patient has liver-complaint.

Now examine the patient's hands and you find that the whole palmar surface is thickly studded with warty growths, from the size of a pinhead to that of a pea, hard, deep-seated, and painful; several of these lesions are on the back of the last phalanges also. The soles are the seat of similar growths. This condition has lasted for over two years, and in order to walk or work at his trade with any comfort, he is obliged to pare the growths with a razor. Two years and a half ago our patient began the use of Fowler's solution, which, in doses of from 5 to 10 drops, seemed to keep the disease in abeyance; he has continued to take the medicine until the present time. Six months after he began the use of arsenic the affection of the soles and palms began, and has remained until now.

Here, then, I think, is our explanation of the causation of the pigmentation and of the warty condition of palms and soles. He had probably taken arsenic before he ever went to Mt. Clemens, and the coloring was the result of the administration of that drug; he had also taken it for a long time, for the reason that the pigmentation is general, instead of its occupying the sites of old psoriatic lesions, which is the case when the color occurs early in the treatment. I am at a loss to account for its sudden appearance. I find, however, that this man's skin is very sensitive, that he is obliged to wear the finest underwear, that a slight injury to the skin is followed by a pigment-deposit; it may be that the constant bathing in the irritating waters of Mt. Clemens for so long a time was the determining cause.

Our patient seeks relief; he wants to get rid of his psoriasis, of his abnormal color, and of the affection of the palms and soles.

In the treatment of psoriasis arsenic stands at the head of all internal remedies; it probably cures (so far as cures can be expected, for all cases tend to relapse) more cases of the disease than all other drugs used, but it is contra-indicated in this case even if we had no pigmentation or warty growths. The contra-indicating symptom in the case is the pruritus; I never give the drug in this disease when itching is intense. I think we will give him increasing doses of potassium iodid, which has been highly spoken of in some cases of the disease. Local treatment, so valuable in all cases, we will have to dispense with on account of the liability of its causing increase of pigmentation. Psoriatic patients usually have the appearance of being in perfect health; in fact, many are far above the average. Proper diet, however, is important; our patient says he lives mostly on lean meat, coffee, very little starchy, and no oily food, if he can avoid it. He suffers more from cold than the ordinary person, and I think he needs what he omits from his food—fat and starch; we will give him vegetables to furnish the starch, and, if he will not take fat as food, oil as medicine. The gleet must be cured. Whatever drug or treatment we decide upon in a given case should not be discontinued until it has been given for a considerable length of time, even if at first the disease seems aggravated. With patience on the part of the patient, with careful scrutiny and removal of trivial symptoms, and proper medication, the lesions of psoriasis can be made to disappear within from one to three months.

Let us now consider the pigmentation. Is there any means by which we can hope to relieve him of this disfigurement? The color of the skin in the white race is due to the deposit of pigment-granules in the lower layers of the rete cells; the amount varies as the individual is light-colored or dark-colored, and when abnormal pigmentation occurs, all the cells of the epidermis may be stained; the pigment itself is normal, only increased in amount. In argyria the silver is deposited in minute particles in the derma, and the same is true of the substances used in tattooing. It is interesting to notice the tolerance of the skin to the presence of a foreign body, these substances remaining throughout the whole life of the individual without causing the slightest inconvenience. The source of the normal pigment is the blood, the lower layer of epidermic cells selecting and depositing the granules, but I think that these same cells are manufacturers as well as selectors and that from their own protoplasm they may, under certain influences, produce the pigment. The arsenic-staining is due to the stimulation of rete cells by the drug, and not to a deposit of the metal in the derma. The specific treatment of hyper-pigmentation is eminently unsatisfactory, and before beginning any treatment we must be positive that the process is at a standstill. Those dyschromæ which are symptomatic of disease of the liver and uterus may disappear when these organs are restored to their normal condition, and to this end our therapy is directed. The specific treatment consists of the use of local applications that will hasten the reproduction of epidermis, the new and unpigmented taking the place of the old pigmented epidermis. Epidermis is easy enough of removal by such drugs as croton oil, mustard, and cantharides, but these are unavailable because their use is followed by an increased deposit of pigment. Nitric acid, hydrochloric acid, acetic acid, corrosive sublimate, and hydrogen dioxid will remove the epidermis and not be followed by increase of pigment. If time is no object borax, sulfur, or the alkaline soaps may be used, the slow process, I think, giving the best result. By the rapid process we aim to form a blister over the stain quickly, and then subdue the irritation as quickly as possible. In the case of the man before us there are reasons why this treatment would not be best: first, because of the large surface involved; second, it is upon parts of the body that are covered; and third, the process is not at a standstill, as we find that new areas of pigment are appearing while old ones are disappearing, and any effort that we might make is likely to be followed by an increase rather than by a decrease of pigment.

Let us now consider the affection of the palms and soles. Here we find the whole surface thickly studded with these dome-shaped epidermic lesions; for the most part each lesion preserves its identity, although so numerous are they that their borders touch all around, and so fast are they developed that he is obliged to pare them off at least twice a week; the condition interferes with his work, and is a matter of grave import to him. Ordinary callosities, or those due to occupation, offer some chance of being bettered by treatment or by giving up the occupation; but in this case neither rest nor any local application that has been used has been of any benefit. Internally in these cases we rely upon arsenic; but here we are again handicapped, for we believe the condition was caused by the use of this drug, and we have stopped its use. Locally we will have the parts pared down close, and then apply a plaster of salicylic acid (15 per cent.) for three days, when, on its removal, we will be able to peel off the epidermis; an alkaline ointment should then be bound to the surface for twenty-four hours, and on its removal a simple fat applied. The process will have to be repeated as often as the growths re-form. I shall hardly expect to get a permanent cure, relief being the best we can hope for. The case is an interesting one, and has shown us that serious untoward effects sometimes follow the giving of arsenic. The lesson it teaches is that it is better to treat first with other drugs those affections of the skin in which arsenic seems indicated, reserving for the arsenic those that resist all other medication.

CLINICAL MEMORANDA.

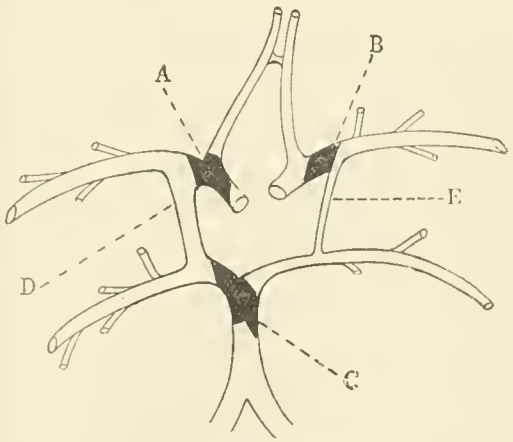
MULTIPLE THROMBOSIS OF THE CIRCLE OF WILLIS.

By JOSEPH LEIDY, M.D.,
of Philadelphia;
Physician to the Out-Patient Department of the Pennsylvania Hospital; Assistant Physician to the Hospital for Epileptics.

Cases of multiple thrombosis of the cerebral arteries, producing a group of symptoms similar to those presented by the case reported by Dr. J. T. Eskridge in The Medical News of January 6, 1894, are so unusual that I may be pardoned for occupying a brief space to refer to a similar case, including a report of the autopsy, presenting almost an exact duplicate of the clinical picture of the case of Dr. Eskridge.

At the meeting of the American Neurological Society, held in June, 1890, I had the honor to present an interesting pathologic specimen of "Multiple thrombosis of the circle of Willis, in connection with a series of anomalies and asymmetries found in thirty-five specimens of the circle of Willis," believing the explanation of frequent evanescent palsies, embolic or thrombotic, to reside in either an anomalous or asymmetric condition of these arteries, which is far more frequent than is generally supposed. The pathologic specimen presented proved this to be the fact in explanation of an attack in a case which I reported to the Pathological Society of Philadelphia in November of the same year.

The patient, a colored man, thirty years of age, married, addicted to the use of alcohol and tobacco to excess, with a syphilitic history, was admitted to the medical wards of the Pennsylvania Hospital May 10, 1890. He had been bled at the nape of the neck at intervals of six months for three years previously for the relief of occipital headaches, and it was his intention to have been cupped on the day previous to his admission to the hospital. While driving his cart he noticed a loss of power in the right leg and arm, his tongue felt thick, articulation was difficult, and he would have fallen had he not been caught by his companion who was driving with him. Twelve hours after he was brought to the hospital he had incontinence of urine added to the foregoing group of symptoms; he was dazed, but conscious; his tongue was protruded toward the paralyzed side. His condition improved during the following five days, with some return of power in the right arm, and considerable improvement of speech. On the sixth day there was some loss of power noted in the left leg, and in the course of twenty-four hours the whole of the left side of the body was involved. He became unconscious on the following day, with also secondary loss of power in the right arm and with involvement of the sphincters. Death supervened in forty-eight hours. The clinical picture presented by this case strikingly portrays the group of symptoms and the course in Dr. Eskridge's case. The pathologic specimen is now preserved in the Mütter Museum of the College of Physicians for reference.



A. Thrombus in left middle cerebral artery.
B. Thrombus in right middle cerebral artery.
C. Thrombus in basilar artery.
D. Large left posterior communicating artery.
E. Unusually small right posterior communicating artery.

I believe the amelioration of the symptoms following the first seizure to have been due, first, to a cessation of the pathologic process through heroic antisyphilitic treatment; and secondly, to the anomalous and asymmetric condition of the circle of Willis, which afforded a partial collateral circulation to supply the left hemisphere through the outer distribution of the middle cerebral artery by way of an enormously large left posterior communicating artery. I append a rough sketch of the specimen.

The diagnosis of thrombosis of the cerebral arteries was made ante-mortem, and confirmed subsequently by the characteristic lesions found at the autopsy.

This description, in conjunction with the case of Dr. Eskridge, makes the picture both clinically and pathologically one of extreme interest.

233 SOUTH THIRTEENTH STREET.

THREE CASES OF PARTIAL PARALYSIS OF THE OCULAR MUSCLES FROM INJURY TO THE HEAD.

BY VITO L. RAIA, M.D.,
OF PROVIDENCE, R. I.

1. PARALYSIS OF THE EXTERNAL RECTUS OF THE RIGHT EYE.—A man, aged sixty-three years, was struck on the left parietal region by a board, sustaining a contused wound of the scalp. He remained unconscious for several hours and afterward complained of headache and dizziness. Three weeks after the accident the patient began to see double. When examined, vision was normal, abduction of the right eye abolished, movements in all other directions normal. The double images (homonymous diplopia) were fused into one at 20 feet with a prism 26°, base outward.

2. PARALYSIS OF THE SUPERIOR OBLIQUE OF THE LEFT EYE.—A man, aged forty-five years, fell and sustained a contused wound of the upper part of the right temple. Three days after the accident the patient began to notice a disturbance of vision. At the site of the injury there was a scar one inch long, in a horizontal direction. Vision of both eyes was normal. The patient kept his head bent toward the right side, with chin depressed and lids wide open; diplopia was very embarrassing. In testing the latter with a candle, the left (or false) image, which belonged to the left eye, was downward, with the upper extremity inclined toward the median line, and closer to the body of the patient than that of the right one. Diplopia was present only when the object was brought in the lower common field of vision.

3. PARALYSIS OF THE INTERNAL RECTUS OF THE RIGHT EYE.—A boy, aged nine years, was struck on the upper part of the temporal region of the right side by a can of milk, thrown from a train. He remained unconscious for two days. Four weeks after the accident the patient began to complain as regards his eyes. When I saw the boy there was a scar about two inches long and three-quarters of an inch wide transversely, situated at the upper and posterior part of the temporal region. The surface of the scar was very irregular and considerably lower than that of the skull, due evidently to fracture of the latter, with depression of the fragments. Vision was normal, mental faculties perfect, movements of convergence of the right eye weakened. The patient had diplopia (crossed).

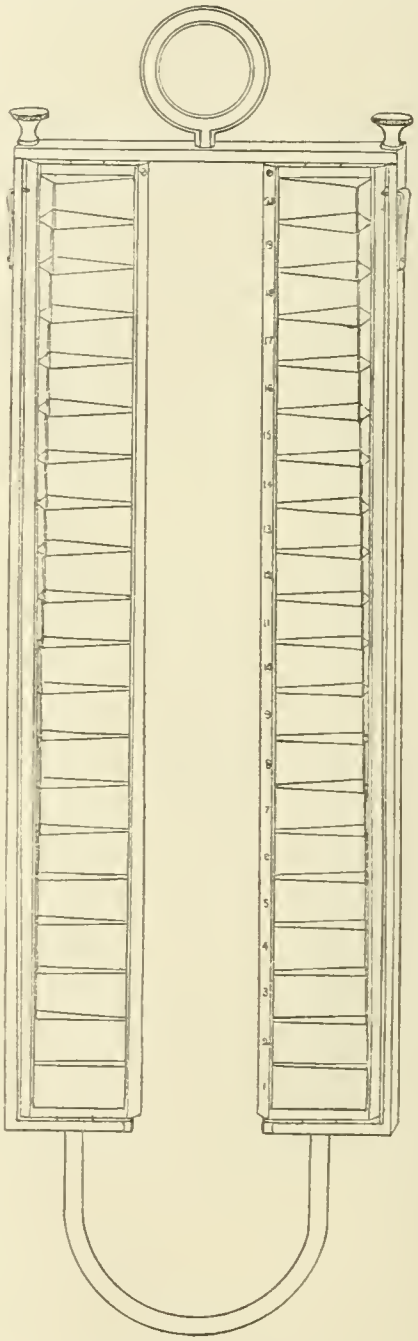
These cases came under my observation at the same time and show the following peculiarities: 1. In the first two cases the injury was on one side of the head, while the ocular paralysis affected the opposite eye. 2. In the last case, while the compression seemed to be exerted upon the brain, the permanent injury was limited to a branch of the oculo-motor nerve. 3. The paralysis of the ocular muscles came on some days after the accident (three weeks in the first, four weeks in the last, and two days in the second case).

NEW DEVICE.

AN ARRANGEMENT OF PRISMS FOR TESTING ADDUCTION, ABDUCTION, EXOPHORIA, AND ESOPHORIA.

BY GEORGE M. GOULD, A.M., M.D.,
OF PHILADELPHIA.

IN testing for exophoria and esophoria, and in measuring the power of adduction or of abduction, I have found



the common methods in use both time-wasting and vexatious, and have suggested to Messrs. Wall & Ochs, opti-

cians, 1702 Chestnut Street, Philadelphia, that a double series, "battery," or "pile" of prisms would be of service. The illustration given herewith is the result of our mutual efforts, and after thoroughly testing the instrument I commend it as, mechanically, beautifully made, and, scientifically, admirably effective and convenient. The prisms begin with 1° lenses upon each side, and increase by integers to 20°, so that with 2° steps one may measure all degrees of adduction or of abduction from 2° to 40°. The open central space permits the lenses to be brought close to the eyes without any interference with the patient's nose. The larger handle below allows the first tests to be made with the lowest-power prisms, likewise without striking the nose; and the lowest-power prisms are placed below in order that in testing from low powers to higher powers, the patient's breath may not cloud the lenses to be used next in order. To measure adduction each "battery" is placed "bases out;" to measure abduction, each is revolved so that the bases are "in." To test exophoria and esophoria, the same methods are pursued, the Maddox-rod (*red*) being first placed before one eye in the trial-frame. Each battery is revolved at pleasure, being fixed by a pivot-mechanism below and above, and temporarily held in the position desired by clutches at the sides opposite the 20° prisms. By this mechanism the four tests desired may be made with great celerity and ease. The instrument may also be used for short periods of exercise in adduction or abduction. The illustration is one-half the actual size.

MEDICAL PROGRESS.

Compression of the Spinal Cord by Echinococci.—Friedeberg (*Centralbl. f. klin. Medicin*, 1893, No. 51, p. 1057) has reported the case of a man, thirty-one years old, who for a period of more than three years had suffered with pain in the right thigh, of varying intensity, and shooting in the course of the sciatic nerve. For a short time there had been some incontinence of urine, particularly as a result of violent coughing. There was some sensitiveness on pressure in the hypogastrium and in the course of the right sciatic nerve. The knee-jerks were normal and there was no derangement of common sensibility. An attack of looseness of the bowels was attended with the evacuation of a number of segments of tenia solium, and a course of filix mas was prescribed. Some time later pain in the region of the anus was complained of, and on inspection the skin in this region was found reddened and the tissues infiltrated, while a small blind fistula passed for a short distance by the side of the rectum. In due time the periproctitic abscess healed. The pain in the right thigh persisted, and to it became added numbness of the foot, while the gait became staggering and the temperature was slightly elevated. As time went on, the knee-jerks became exaggerated and ankle-clonus appeared. Pain was also complained of on pressure in the lower dorsal and upper lumbar regions. Finally the loss of power in the lower extremities became complete, marked impairment of sensibility developed, and control of the bowel was lost. Electric irritability was lost, bedsores and other evidences of trophic disturbance appeared, and several fluctuating tumors became evident in the abdomen. Death took place amid the signs of respiratory failure. Upon post-mortem examination the sacrum was found to be destroyed and replaced by a gelatinous collection, in the midst of which numerous small vesicles could be seen. Gelatinous masses and vesicles extended in the length of the vertebral canal to the level of the second dorsal vertebra, compressing the cord, without having penetrated the dura mater. In the region of the last lumbar vertebra the cord was compressed to a delicate band. Small cavities were found in either lung and a mother-cyst with numerous daughter-cysts in the right iliac fossa. In the daughter-cysts scolices and hooklets were found. The right ureter and kidney presented the changes that follow obstruction to the flow of urine.

Pulsation of the Larynx due to Arterial Anomalies.—At a recent meeting of the Berlin Society for Internal Medicine, Litten (*Deutsche medicinische Wochenschrift*, 1893, No. 47, p. 1224) reported the case of a nervous woman, fifty years old, who complained of precordial distress, palpitation of the heart, manifestations of tachycardia, and an uncomfortable sensation in the throat, together with marked beating of the vessels of the neck and pulsation of the larynx. With the cardiac systole the larynx was elevated and displaced to the left. The pulsation could also be observed in the whole course of the trachea. Physical examination failed to disclose the signs of hypertrophy of the heart, valvular disease, or aneurism of the arch of the aorta. The vessels that arose from the arch, however, pulsated strongly and were evidently greatly dilated. It was concluded that there must be an aneurism of one of the vessels arising from the carotid artery to supply the thyroid gland, either the laryngeal or the thyroid, although the evidence was not demonstrative. At a later period it was thought that a diastolic murmur could be heard over the sternum. The woman finally died, and upon post-mortem examination it was found that four large vessels took their origin from the arch of the aorta, the one arising between the left carotid and the left subclavian representing a thyroidea ima. This anomalous vessel was as large as a normal radial, and ascended along the middle line of the trachea to the level of the second ring, where it divided into three branches, which broke up into many smaller ramifications upon the surface of the thyroid gland. All of the vessels that arose from the arch of the aorta were greatly dilated, while the innominate was additionally conspicuously elongated. The intima of these vessels presented areas of fatty degeneration, but no evidences of pronounced atheroma, such as ulceration or calcification.

Paretic Dementia at Puberty.—Bristowe (*British Medical Journal*, No. 1716, p. 1099) has reported the case of a boy, thirteen years old, who two or three years before had been knocked down by a horse and trap, which went over him, the shaft striking him on the back of the head. The child was stunned and remained unconscious for about three hours. Before the accident he was bright and intelligent, but afterward was never the same. Intellectual ability gradually declined. Fourteen months before coming under observation the boy had some kind of seizure in which he lost power upon the left side of the body. The weakness remained and the

child gradually grew worse, and finally became unmanageable. He shouted and screamed without cause, tried to run away, and became dirty in his habits and violent in his conduct. The pupils were equal and sluggish, though later the left was larger than the right. The knee-jerks were at first greatly exaggerated, but later were lost; ankle-clonus could not be elicited. The gait was spastic; the tongue was tremulous, but protruded straight. Speech was hesitating. The hands were held before the face all day and were rubbed, while unintelligible sounds were uttered. While under observation the boy had a convulsive seizure, apparently attended with loss of consciousness. Twitching of the right eye and hand were first noticed, and later the muscles of the right side of the face were involved. After the attack the right leg was found to be weak. Emaciation progressively increased, so that it became necessary to keep the child in bed. He had two other seizures, one involving the left side, the other the right. As time went on the boy passed a purely vegetative existence, exercising no control over the sphincters. Though he took food voraciously the emaciation persisted. There was at no time vomiting or optic neuritis.

Differentiation of B. Coli Commune from B. Typhosus.—FREMLIN (*Archiv f. Hygiene*, vol. xix, fasc. 3), as part of the result of an extended study of B. coli commune from various animals, gives the following summary of the differences between that species and B. typhosus:

1. The motion of B. typhosus is more active and more extensive. 2. B. typhosus shows a much greater tendency to form threads, as two or more individuals are often seen joined, and six or ten in line are not unusual; with the other species such a thread-like form is almost unknown. 3. The growth of B. typhosus on gelatin is distinctly slower; colonies three days old are not further advanced than two-days-old colonies of B. coli commune. This difference is also observed on agar-plates and in stab-cultures. 4. Colonies of B. typhosus are almost invisible on potato, while B. coli commune forms distinct broad orange streaks. 5. B. typhosus has no fermenting action, while the other bacillus possesses well-marked powers in this respect. 6. B. typhosus does not curdle milk, while B. coli commune does. 7. B. typhosus has many flagella. Preparations showing these clearly may be obtained without difficulty from cultures a week old. In this we note a marked difference from B. coli commune, as with it preparations showing flagella are very difficult of demonstration, even under favorable conditions. 8. B. typhosus does not give the indin (indol) reaction with potassium nitrite, while B. coli commune does.

The Etiology of Melæna Neonatorum.—GARTNER (*Archiv f. Gynäkologie*, B. xlv, H. 2, p. 272) has reported two cases of melæna neonatorum, in which examination of the intestinal contents and evacuations, as well as the blood from the heart and the spleen, and the tissues of the spleen, liver, and intestine, disclosed the presence of a short bacillus, with active movement and discernible flagella, multiplying the fission and giving rise to the production of gas. The organism was cultivable upon the ordinary media, and stained readily with anilin colors. Inoculation of young animals, especially dogs, gave rise to the production of a condition comparable to melæna as seen in newborn children, and in the blood and organs of these animals were found organisms the same as those inoculated. The opinion is expressed that the organism found is the causative agent of the morbid condition with which it is associated, and further, that the umbilicus constitutes the portal of entry, as in most, if not all, recent cases, the evidences of peritonitis are to be found.

THERAPEUTIC NOTES.

For Migraine.—

℞.—Butyl-chloral hydrate . . . gr. xv.
Tincture of gelsemium . . gtt. xxx.
Tincture of cannabis indica . gtt. xv.
Glycerin . . . . . f℥iv.
Distilled water . . . ad f℥ijss.—M.
S.—A dessertspoonful p. r. n.

℞.—Butyl-chloral hydrate . . . gr. xvi.
Extract of cannabis indica . . gr. iv.
Make into 16 capsules. Take 2 at once, and 1 every hour or two hours until relief ensues.
Nouv. Rem.; Journ. de Méd. de Paris, No. 49.

For Epilepsy.—

℞.—Potassii bromidi . . . . ℥iv.
Tincturæ belladonnæ . . . f℥iij.
Infusi gentianæ compositus . ad f℥viij.—M.
S.—A tablespoonful thrice daily.

℞.—Camphoræ monobromat. . . gr. xlviij.
Ext. gentianæ . . . . q. s.
Ft. massæ et div. in. pil. no. xij.
S.—One at bedtime.
BLACK, *British Medical Journal*, No. 1723, p. 13.

For Prostatitis.

℞.—Ichthyol . . . . . gr. vijss.
Ext. belladonnæ . . . gr. ijss.
Olei theobromæ . . . ℥iv.—M.
Ft. suppositoriæ no. x. S.—Introduce one into the bowel once or twice daily.
ULLMANN, *Wien. med. Zeitg.*, No. 29; *Les Nouv. Rem.*, No. 23.

For Pruritus Vulvæ.—

℞.—Hydrarg. chlorid. corrosiv. . . gr. j.
Aluminis . . . . . gr. xx.
Pulv. amyli . . . . . ℥jss.
Aquæ menth. piper. . . ad f℥vj.—M.
Ft. lotio.
S.—Apply topically. *Practitioner*, No. 306.

For Tinea Tricophytina.—

℞.—Sodii hyposulphitis . . . ℥j.
Spts. rectificat. . . . . ℥iv.
Aquæ . . . . . ad f℥viij.—M.
Ft. lotio.
S.—To be applied to the affected parts after they have been thoroughly washed with a brush and soap and water. *Practitioner*, No. 306.

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SATURDAY, FEBRUARY 3, 1894.

TO PREVENT THE SPREAD OF TUBERCULOSIS.

IT will surely not be gainsaid that much practical benefit has already accrued through the young science of bacteriology. Though all may not admit the value of protective inoculations, there can be none that will deny the great advances that have been made in sanitary science in the last decade as a direct outcome of the results of bacteriologic research. Not only have we thus been furnished with a rational explanation for the employment of hitherto empiric methods of sanitation and hygiene, but there have likewise resulted an increased saving of life and the avoidance of immeasurable disease. As in all questions, so in this, there have been extremes of view. On the one hand there are those for whom it is not too much to claim almost unlimited possibilities for bacteriology; while on the other hand there are not wanting others who with equal ardor deny the new science everything. Between these two extremes is the judicial mean, including those upon whom falls the important but not agreeable task of harmonizing conflicting opinions and of neutralizing the antagonizing influences of unrestrained zeal and torpid conservatism.

We have now learned enough of schizomycetes to know that they are almost omnipresent; but we have further learned that their mere presence does not of itself constitute disease. In the development of the so-called specific disease-processes something is needed in addition to the presence of the micro-organism that acts as the exciting cause—and this is the predisposition, *i. e.*, to use a favorite simile, the soil must be suitable for the implantation and fertilization of the seed; else this will not thrive. Now if this knowledge has any significance and is to be put into practical application, it means that for prophylactic purposes the greatest stress must be laid upon and the greatest attention paid to both individual and civic hygiene; that is, the resisting power of the individual must be increased, his susceptibility to disease diminished, and the causative agency attenuated or eradicated. Granting, then, the potency of these several factors in the causation of disease, it must be perfectly obvious that the liability to disease will be diminished if the influence of any or all is removed.

At the present time quite an active agitation is going on in various parts of the United States as to the wisdom of including tuberculosis, and particularly pulmonary tuberculosis, among the diseases professional cognizance of which should be reported to some central health-authority, with the object of employing such hygienic and sanitary measures as the circumstances seem to indicate or warrant for restraining the spread of a disease for the prevention of which it is known that so much can be done. Legislation to this effect has already been enacted in the State of Michigan, where it is obligatory upon physicians to report to the Board of Health cases of tuberculosis under their professional care, and in the city of New York the Board of Health also requires notification of cases of tuberculosis. Such a course of action has, besides, the indorsement of the French Congress of Tuberculosis, the American Public Health Association, and the Section of Hygiene of the Pan-American Medical Congress. Missionary work is being done in this direction by the French League for the Prevention of Tuberculosis, and by the Philadelphia Society for the Prevention of Tuberculosis.

As is the case with every scientific advance, so the proposition of registration in tuberculosis has encountered not a little opposition. Among other objections it is suggested that the unfortunate victims of the disease would thus be branded with an irremovable stigma, that they would be shunned by their fellows, that the doors of society would be closed to them, that their personal liberty would be

interfered with, and that other more or less irksome restrictive measures would be adopted. Of this radical extreme there need be little fear, the difficulty itself arousing an adequate and sufficient sense of such danger. Over-zeal seems less probable than under-zeal. Most likely in actual outworking only such measures would be enforced as would tend to result in improving the condition of the sick and saving the well from infection, without undue trespass on liberty and without any real hardship to the sick or to his friends. In exactly what these measures would consist, if registration became general, would be a subject for future mature deliberation. Nor is it unlikely that the medical profession would be ignored in the framing of the rules governing the entire course of procedure.

The situation appears to be simply this: It is generally admitted that the tuberculous patient constitutes the focus whence transmission of the disease occurs. This most commonly takes place through the intermediation of the expectorated matters, which being indiscriminately disposed of, become dry, are ground to powder, and in the form of dust are carried by currents of air to find lodgment, especially in the respiratory passages of the well, some of whom are predisposed by heredity or by unfavorable hygienic surroundings to the infection; or they fall upon exposed articles of food or drink, and in this manner gain access to the gastro-intestinal tract. It is the almost universal consensus of opinion that if the sputum were in the first place properly disposed of, the danger would at once be greatly diminished. In the failure of this it becomes necessary as far as possible to sterilize the contaminated surroundings of the patient, including the bed-clothing and the body-clothing, the furniture, the walls and floors of the living-rooms and the like. Under existing circumstances the conscientious physician will in the individual case advise that such steps be taken, but he has no means of insuring their carrying out, and, besides, there remain a considerable number of cases that do not come under the physician's immediate care, and that require attention directly from the health authorities. It thus comes about that what is everybody's business is nobody's business—and that is the present status of affairs.

It is obviously the poor, the ignorant, and the indifferent that suffer most and likewise constitute the greatest menace to others in this connection. Will anyone undertake to say that among these, suitable precautions are taken in any considerable proportion of cases? Now if there were a central health-authority (such as a Board of Health) to which notification should be made of houses in which tuberculous persons reside, such a body could in a given case direct or conduct a proper sanitary investigation and could determine upon the line of action to be taken. It could, for instance, recommend to the house-owner or the house-occupants, as the circumstances seemed to demand, the carrying out of certain measures; and in case these were not adopted the body could then have authority to undertake the necessary procedures on its own account. If, as is the case, improperly constructed buildings may be condemned, house-drainage must be subjected to official scrutiny, and nuisances of one kind or another may be suppressed, surely it does not seem unreasonable that the State or the municipality should have the power to declare as a menace to health and life certain houses or quarters that are recognized to be centers of disease-infection. Nor should such authority be withheld by reason of fear that a perfect system of sanitation does not appear immediately feasible, or because everything that it is thought should be done does not seem at once capable of performance. As experience accumulates, old methods would be improved and new methods devised. It does not seem likely that a body thus empowered would attempt the impossible.

In addition to the functions of caring for the hygienic and sanitary surroundings of tuberculous patients unable or unwilling from poverty, ignorance, or indifference to exercise such care, such a body could also see that both well and sick were instructed by means of tracts, and perhaps also by means of popular lectures, as to the nature of tuberculosis, its dangers, its mode of transmission, and the best means of preventing its spread and staying its advance.

To sum up briefly, our own position is practically this:

Tuberculosis is a disease that is transmissible from the sick to the well. Its perpetuation and its transmission depend upon a condition of lowered vitality (sometimes hereditary, but more commonly the result of unfavorable hygienic conditions and habits), in conjunction with a failure to sterilize the sputum by some approved means and the contamination of the surroundings of the tuberculous. These

conditions are to be best remedied through the intelligent action of a properly authorized and organized central body, together with the hearty coöperation of the medical profession, both individually and collectively. With this end in view, registration of houses in which tuberculous persons reside (in case of death notification is now almost universally made through the usual channels) would tend to insure a proper carrying out of suitable sanitary measures, and the instruction of such persons and their friends as to the best means of preventing the further spread of the disease, and also as to the best mode of life for the sick.

EDITORIAL COMMENTS.

Associations for the Relief of Widows and Children of Deceased Medical Men.—We have on a previous occasion spoken of the wisdom and philanthropy of organizations for the relief of indigent widows and children of deceased medical men, commending their formation everywhere, and urging all physicians to enroll themselves as contributing members. The excellent work done by existing associations must constitute the strongest argument for their maintenance and the extension of their usefulness. From a recent report of the Board of Managers of the N. Y. Society for the Relief of Widows and Orphans of Medical Men, we learn that during the year 1893 eleven widows and three children of deceased members were relieved; $6610.30 were added to the permanent fund, which has reached the respectable proportions of $189,157.06. The membership of the Society numbers 143, and the expenses for the year were but $180.30. The number of benefactors is 55, most of whom have contributed $150 each. The largest gift is one of $20,000, by the late Dr. Alonzo Clark. In addition to this Society there exists in New York also a Physicians' Mutual Aid Association, which provides for the payment of $1000 to the representatives of a deceased member, whose fees during life would have been from $15 to $20. Our own Mutual Aid Association of the Philadelphia County Medical Society is likewise doing excellent work, its usefulness, however, being restricted by the smallness of its permanent fund. As the Association is not so much intended for mutual aid as for the relief of indigent widows and children of deceased medical men, a change in name to Benevolent Fund of the Philadelphia County Medical Society is properly contemplated. As one of the speakers said, at the recent annual meeting of the Association, it would be desirable to have the benefactions of the Society also extended to the families of other medical men than those that have been members. Such a noble end is only to be attained by the creation of a large permanent fund. It thus becomes the duty of every medical man to enroll himself as a member of his local Aid Association, to contribute as largely to its funds as his means will allow, and to exert his influence among his clients and friends to induce them to contribute during life, and bequeath at death, generously, to so worthy and humanitarian a cause.

To Abolish the Office of Coroner.—An active movement is on foot in the city of New York to correct the abuses and inadequacies of the office of Coroner by abolishing the office or so modifying existing legislation as to eradicate the evils of the present system. A memorial has been prepared by a duly authorized committee of the Medico-Legal Society of the State of New York and presented to the Legislature asking for the desired reform. The recommendations proposed are:

The creation of a new officer to be styled "Medical Examiner" (as in Massachusetts and Connecticut), or "County Physician" (as in New Jersey), who shall be authorized to conduct inquests or examinations in all cases in which death has occurred by violence, or in which there is reason to suspect that death is due to other than natural causes. The duties of this officer should consist in the conduct of all autopsies and the decision of all questions on the medical side of the inquiry (without a jury) before a competent court or before the Coroner as a judicial officer, if retained after the plan adopted in Connecticut.

This medical examiner should be appointed by the county judges of each county, except in New York, where the appointment is to be made by the Chief Justice of the Court of Common Pleas. Only physicians skilled in their profession, of at least five years' practice, are to be eligible to such appointment, and, so far as possible, without reference to partisan or political considerations.

Only persons learned in the law shall be eligible to the office of Coroner, and if the inquiry is conducted before the Coroner he shall have charge, judicially, of all legal questions, and the hearing, inquest, and proceedings shall be the same as if before the police magistrates in the city of New York or other cities of over 100,000 inhabitants, and before justices of the peace in all counties of the State, except in New York and Kings counties.

The movement has our warmest indorsement and our heartiest wishes for its entire success. We could then look forward to the possibility of a similar much-needed reform in the State of Pennsylvania.

Liability of Railroad Corporations for Negligence of Physicians.—Whether or not it is within the corporate powers of a railroad company, under any circumstances, to oblige itself to the rendition of medical or surgical aid to its sick or injured employés, by assuming it as a duty or otherwise, or to become liable for any negligence of any such surgeon acting in the line of his profession, the Supreme Court of Florida says is a *quære*. If it can become so liable, it holds that its whole duty in that respect will have been performed when it employs a person of ordinary competence and skill in that profession; and that, having done so, it cannot be held liable for the carelessness or negligence of such surgeon in the performance of his duties as such. This was brought out in a recent case in which an injured employé undertook to fasten liability upon a railroad company on a charge that a surgeon who was employed by said company to render medical and surgical aid to injured employés did, in the exercise of his duty as such physician and surgeon, set his injured arm in such an unskilled and negligent manner as to render it ill-shaped, and forever useless to him in the

performance of any manual labor. There was no allegation or proof that the physician and surgeon so alleged to have been employed by the railroad company was not competent and skilled in the line of his profession; and, in the absence of such allegation and the proof to sustain it, the court said that the railroad company was not liable for any negligent exercise by such surgeon of his profession in the treatment of the employé complaining. Even though it should be admitted to be within the corporate powers of such a company to obligate itself to the rendition of medical and surgical aid to its sick or injured employés, by assuming it as a duty or otherwise, or to become liable under any circumstances for any negligence of any such surgeon acting in the line of his profession, still it would seem to be well settled that it will have performed its entire duty in that respect when it employs a person of ordinary competence and skill in that profession; and that, having done so, it cannot be held liable for the carelessness or negligence of such surgeon in the performance of his duty as such.

Mrs. Ernest Hart, the wife of the editor of the *British Medical Journal*, has during the past year become personally known to thousands of Americans, and the knowledge of her work to millions. In carrying to the Irish poor the means and methods of self-help this most remarkable woman has done a work that is good beyond estimation and compare, and has done it with a self-sacrifice that even those who know her most intimately can but barely guess. What the history of her life would be was well suggested by her refusal, as a girl, to wear fine or expensive dresses to church, and as a young lady, by her return of a gift of diamonds with the request for Ruskin's works instead. Such girls as that and such women as she, are indeed sadly rare. While teaching the starving Irish to dye and weave, and at the same time carrying on any amount of other work among the poor of London, this many-minded woman has also kept her place in the best society of London, has been an art-lover and worker and a student of the social life and handicrafts of nearly every country of the world. But our explanation of this allusion in a medical journal consists in the fact, known to but few, that Mrs. Hart before doing these things had passed with the highest honors the most rigorous examinations of the medical faculties of Paris, and by thorough hospital service had completed a perfect knowledge of medicine both theoretic and practical. Wherever she goes physicians should vie with others in hastening to do her will, and to do her honor!

When Rogues Fall Out, etc.—According to the *Summit County Beacon*, of Akron, Ohio, we learn that the Cuyahoga Falls (Ohio) Keeley Institute has sued the Marysville (Ohio) Keeley Institute for $100,000. The plaintiff states that he has paid to the defendant $30,000 in cash and $49,000 in stock, besides agreeing to pay a bonus of $20 for each patient under treatment, upon the representation that the defendant had paid the original Keeley Company $100,000 for the privilege of the exclusive use of the treatment in the State. It had further been claimed that with 600 patients a year a dividend of 34.16 per cent. could be declared, and with 1000 patients a dividend of 74.16 per cent., and also that the number of "lapses" would not exceed 5 per cent., whereas they exceeded 25 per cent., and among the first hundred 40 per cent. Finally, it had been claimed that the morphin-cure was absolute, whereas it proved entirely worthless. Surely the bottom of Keeleyism has fallen out. A deluded public will now be ready to turn to legitimate medicine until a new miracle-worker appears. As the mine had been pretty well worked out the suits for libel against the London *Lancet* and the London *Medical Press and Circular* were naturally withdrawn.

School Outhouses.—Although it has been enacted that boards of school-directors and controllers in the State of Pennsylvania shall provide suitable and convenient water-closets for each of the schools under their official jurisdiction, not less than two for each school or schoolbullding where both sexes are in attendance, in their respective school-districts, with separate means of access for each; and, unless placed at a remote distance one from the other, the approaches or walks thereto shall be separated by a substantial close fence not less than seven feet in height; and it shall be the duty of the directors or controllers to make provision for keeping the water-closets in a clean, comfortable, and healthful condition; there is reason to believe that this wise legislation is not everywhere throughout the State adequately administered. The merits of the law are so perfectly obvious that we should think the mere suggestion of delinquency should stimulate those in authority to its effective administration.

An Appeal to the People, through the advertising columns of daily (lay) newspapers, is being made to further the sale of the "Animal Extracts, prepared according to the process and under the supervision of Dr. Wm. A. Hammond." An extensive advertisement appeared in the advertising columns of the Chattanooga *Daily Times*, of January 19, 1894. Comment is unnecessary!

SELECTIONS.

TAXING PROPRIETARY MEDICINES.

The Ways and Means Committee of the House of Representatives has recommended the restoration of the tax on proprietary medicines. If to the tax the printing of the ingredients on the label would be required, much could be accomplished in the interest of the people and the profession. In this way this subject is regulated in European countries. Some of the preparations have value and can be used by the public with safety, while many of them are not alone dangerous, but worthless, and their sale is dependent entirely upon the fradulent claims to cure everything, in their advertisements. In fact, if this advertising was stopped, they would find no sale, and just in proportion as it is pushed, are they sold. They appeal to the hopes and fears of the sick and afflicted, and it is the obtaining of money under the worst kind of false pretences, and is really nothing more or less than robbery. While Congress is engaged in this business, would it not be well to tax the itinerant practitioner and vender of nostrums, with show-

accompaniments? They go from one State to the other, and the question naturally arises whether this is not one of inter-state commerce, that should be regulated by Congress. It is the policy of this class of frauds not to stay too long at one place, or to return at too short intervals to the same place, for the reason that it takes time to secure a fresh crop of dupes.—*Journal of the American Medical Association.*

ENGLISH AND AMERICAN JOURNALISM COMPARED.

From this condemnation I desire to exclude the literature of our American brethren. The country which has given to us the *Index Medicus* and the *Index-Catalogue* of its splendid library is not likely to fail in knowledge of the history of medicine. A knowledge of the work of others that is nearly always honest and thorough is as common in the best American medical literature as it is rare in our English journals. The man who writes on his own experience and knowledge writes on a poor and narrow and shifty foundation. In science he is to be found only in medicine; and in scientific medicine he bears the prefix—in all its significations—British.—*From Presidential Address of* J. Greig Smith, *on Modern Medical Journalism; Bristol Medico-Chirurgical Journal.*

REVIEWS.

Chemistry and Physics: A Manual for Students and Practitioners. By Joseph Struthers, Ph.B., D. W. Ward, Ph.B., and Charles S. Willmarth, M.S. (The Students' Quiz Series, edited by B. B. Gallaudet, M.D.) Philadelphia: Lea Brothers & Co., 1893.

This is a neatly printed, small octavo of two hundred and seventy-nine pages, with an index and numerous good illustrations. It is arranged in questions and answers, a method that has been often adopted in works of this class, but concerning the advantage of which there is room for argument. The work, of course, is primarily intended to meet the wants of students taking chemistry as part of a general collegiate, medical, or dental course. It is a compilation from standard text-books, and the merit of such a work lies essentially in the judgment and accuracy with which the selections are made. The combination of physics with chemistry renders the volume rather more widely useful than a compend of chemistry alone, and as many medical schools are now requiring an entrance examination in physics, the medical student will find the book useful in the pre-college year. The text is generally correct. We note with regret the use of the old spelling, and the occasional occurrence of such objectionable names as "bisulphate of potash," "bicarbonate of sodium."

The organic chemistry occupies sixty-seven pages, presenting a good summary of this extended field. The recent investigations on the structural formulæ of the sugars might have been presented more clearly, and the necessity of great condensation has rendered the text in rare instances rather vague. There is no section on clinical chemistry.

Treatment of Sterility in the Woman. By Dr. de Sinéty. Translated by E. P. Hurd, M.D. (The Physicians' Leisure Library.) Pp. 130. Detroit, Mich.: George S. Davis.

The cure of sterility in the female is one of the most vexing and perplexing problems with which the physician is called upon to deal, and its causes are of such a varied nature that unless one's mind is refreshed by some such summary as is presented in this brochure, the true etiology of any one case may readily be overlooked. It should always be borne in mind—and the author fails to mention this—that the sterility is very frequently the result of a lacerated perineum with an associated lack of retentive power of the vagina, so that there is an almost immediate escape of the semen. In such cases perineorrhaphy is very likely to be followed by most happy results. Dr. de Sinéty has given us a systematic and interesting symposium on an important gynecologic condition, and his book has not suffered deterioration at the hands of his translator.

International Clinics: A Quarterly of Clinical Lectures on Medicine, Neurology, Pediatrics, Surgery, Genito-urinary Surgery, Gynecology, Ophthalmology, Laryngology, Otology, Dermatology, etc. Edited by John M. Keating, M.D., LL.D.; Judson Daland, M.D.; J. Mitchell Bruce, M.D., F.R.C.P.; David W. Finlay, M.D., F.R.C.P. Vol. III, Third Series, 1893.

This volume of *International Clinics* fully sustains the enviable reputation made by preceding volumes. The high standard originally set is faithfully adhered to, and the result is the presentation of an interesting panorama of practical medicine of the hour. The contributions come from many parts of the scientific world though, naturally, the larger number are by American teachers. This latter fact, however, cannot be understood to imply any detraction from the merits of the work, for it will be conceded by impartial minds that there is no people that excels the American in practical matters.

Lack of space prevents even the mere mention of the titles or of the names of the authors of the forty-eight papers contained within this volume, and a sense of delicacy forbids the selection of any number for comment. We can, however, truthfully say that the collection of papers is, as a whole, an interesting and instructive one, and reflects great credit upon contributors, editors, and publishers. Twelve plates and twenty figures illustrate the text.

Manual of Physical Diagnosis. For the Use of Students and Physicians. By James Tyson, M.D., Professor of Clinical Medicine in the University of Pennsylvania, etc. Second edition, revised and enlarged. 8vo, pp. 241. Philadelphia: P. Blakiston, Son & Co., 1893.

The deserved approval that has been accorded Dr. Tyson's little manual is indicated by the appearance of a second edition two years after the first. We need not here repeat our previous favorable criticism. We are glad to note that the number of pages has increased from 136 to 241, and the number of illustrations from seven-

teen to thirty-three; that sections have been added on the use of sphygmograph and cardiograph in diagnosis, as well as a chapter on physical examination of the abdomen; besides an appendix detailing methods of making examinations of blood and sputum, of the gastric contents, and of making post-mortem examinations. The popularity of Tyson's *Physical Diagnosis* will be enhanced by this revision.

Hysterical Women: Trials, Tricks, Tears and Tantrums. By A. W. Thornton, M.D. Chicago: Donohue & Henneberry, 1893.

A book with a sensational title, with a most sensational frontispiece representing a physician dashing cold water on a patient in hysterical convulsions, surrounded by excited friends, this work has little to commend it, and much that should be severely criticised. It may be imagined that "remarkable cases" and "remarkable cures" are selected and detailed. The author has, he states, written mainly for "the million," and he has certainly selected his material with an eye single to this purpose. There is no attempt to define or to make clear the nature of hysteria; and the oft-repeated methods of cure by cold water, sternness, and the like, evidence the lack of appreciation of hysteria as an actual disease.

An Outline of the Embryology of the Eye, with Illustrations from Original Pen-Drawings by the Author. By Ward A. Holden, A.M., M.D., Assistant-Surgeon, New York Ophthalmic and Aural Institute, etc. The Cartwright Prize Essay for 1893. New York: G. P. Putnam's Sons, 1893.

Notable among the many bright and rising students of ophthalmic science is Dr. Holden, who is to be congratulated upon the preparation of this most excellent monograph on the subject expressed in the foregoing title. The beautiful little volume is illustrated with engravings that are a credit to both author and publisher.

Differential Diagnosis of Common Diseases of the Eye: Designed for the Use of General Physicians. By W. F. Conners, Oil City, Pa., 1893.

This is a chart about 12 x 15 inches, designed to be hung on the wall, and to aid physicians without instruments and the specialist's knowledge, to make a diagnosis of common eye-diseases. We commend it.

CORRESPONDENCE.

THE MEDICAL EXAMINERS.

To the Editor of The Medical News,

Sir: The Medical News of January 27th, in an editorial comment upon the State Board of Medical Examiners law, says: "Pitiful as must be the tacit admission by those who may not have thought seriously upon the subject, that there can be more than one kind of medicine and one kind of physician, it is still a source of congratulation that at least the worst forms of incompetence and downright quackery will no longer find the soil of Pennsylvania adapted for their propagation."

If the medical press in general had been as loyal to the cause of true medicine and had shown the earnestness of spirit in its defence that has been shown by The Medical News the profession could have escaped this "tacit admission" that there can be more than one kind of medicine.

Instead of congratulation, however, Mr. Editor, that at least the worst forms of quackery will no longer find the soil of Pennsylvania adapted for their propagation, we recognize with regret and chagrin that the Examiners law is formulated to aid in propagating the worst forms of quackery, namely, those forms which claim incorporation, vested rights, etc., and the technical resources that follow in defence of such claims. There is but one kind of medicine and but one kind of physician so long as we have an educational requirement for the physician, provided the physician determines to assert his rights. If the educational qualification has meaning, the educated medical profession is the medical authority as well in therapeutics as in all other medical questions.

The medical profession, not the State or the people, is the authority which must and does decide that we have but one kind of medicine, one kind of physician, and one kind of therapeutics. Therapeutics belongs to the department of medicine, and questions in relation thereto are to be decided by the medical profession, not by the General Assembly, nor by any other than medical authority. But this Examiners law authorizes the Governor to appoint a board of examiners to be composed of homeopaths because the homeopath declares he has a therapeutics upon the basis of the theories of Hahnemann, and that he has a college chartered by the State with power to confer degrees upon the basis of these theories. If the State grants a charter for a medical college, however, with power to confer degrees upon the basis of theories which, by the medical world, have been declared of no value as a therapeutic basis, such a college is incorporated by the State either in ignorance or in disregard of the decision of the medical profession, which, by right of education, is the medical authority of the State.

The medical profession is as undeniably the highest medical authority as is the Supreme Court the highest legal authority, and a judicial decision should here be obtained as to the prerogative of the medical profession, whether or not by right of education its decisions should be respected as the medical authority of the State, and whether or not a medical college can be declared to be legally incorporated which adopts as an educational basis, and by its charter is authorized to confer degrees upon the basis of theories that have been rejected by the medical profession of the world.

A half-century has elapsed since a charter, the first in the world, was granted in Pennsylvania at the request of those claiming to be homeopaths, under which they claim the right to confer degrees upon the basis of the theories of Hahnemann, and during all this time no move has been made by the profession to assert its prerogative in a test of the legality of the incorporation of such a college. Even when a law is passed authorizing the homeopath to receive a license as a competent physician after being examined by a board of homeopaths, the Governor can find members of the medical profession of high intelligence and good professional standing who

yet seem to be willing to still continue this pusillanimity or imbecility as the policy of the profession, and who as members of a board of examiners are willing to coöperate with representatives of incorporated quackery in enforcing this abortion of medical legislation called a Medical Examiners law.

Duty to the public requires the profession to assert its prerogative and secure a legal decision as to the right of a college to employ as an educational basis the rejected theories of Hahnemann, as well as the right of the State to accept the degree of such a college as an evidence of educational qualification for a competent physician.

We may say of the gentlemen named by the Governor as examiners, if they do not know that the man who adopts the theories of Hahnemann as the basis of his therapeutic methods is not a competent physician, that they are themselves not competent to act as examiners, and if they possess that knowledge they should assuredly not coöperate in executing a law which authorizes such men to receive a license as competent physicians.

We have here, Sir, a condition, not a theory. If amiability supplants sagacity, and the gentlemen consent to serve as a board of examiners, the graduates of our colleges by contributing one dollar each instead of paying twenty-five dollars for an examination can have the law set aside by any court in the Commonwealth, not even excepting our Orphans' Court with the President Judge on the bench.

As our medical colleges cannot be said to be in affiliation with the profession and with the colleges of other States, while the faculties are committed to the support and are willing to aid in enforcing a law which authorizes homeopaths to receive a license as competent physicians, we hope the members of these faculties will lose no time in placing themselves on record as opposing this law, the execution of which is in conflict with the medical authority which colleges in good standing are required to support.

S. UPDEGROVE.

PHILADELPHIA, January 29, 1894.

THE ADMINISTRATION OF HEALTH-ORDINANCES.

To the Editor of THE MEDICAL NEWS,

SIR: Desiring to learn something concerning the health-ordinances in force in the city of Philadelphia, I recently applied to the Health-Officer for a circular or pamphlet containing such, and was surprised to learn from him that no such collective pamphlet exists, that only by searching through the several annuals, dating back, I suppose, to the earliest times, and by wading through a mass of digests and commentaries, could I obtain a knowledge of the laws I am supposed to obey. Possibly there has never been a demand such as I have made. As is usual with all ordinances, no one seems to care for them after they have once been brought into existence; but health-laws must and should be common knowledge. A tenant, for instance, ought to know what authority the Board of Health possesses over his landlord.

A citizen ought to be aware of the laws respecting various nuisances. Physicians especially ought to know what rights they have or can use in correcting unsanitary conditions. I have reason to believe that were the present statutes enforced many of the evils of the "slums" would be done away with, many hovels, breeding-places of disease, would be torn down, and the filthy condition of some of the courts and streets an impossibility; but no one seems to know—I mean, among the citizens—what the laws on the subject really are, and, therefore, they do not insist on their enforcement or aid in calling the attention of the proper officials to possible neglect of duty. It seems to me that here would be a good beginning for active propaganda in the education of citizens in public hygiene. Let such an organized body as the County Medical Society, or the College of Physicians, or the journal you, Sir Editor, have the honor to direct, prepare for public distribution copies of the more general health-ordinances now in force; let them be printed in various languages, and plainly worded, and let them be given a wide distribution and circulation.

From time to time, as new laws are made or old ones repealed, a revision of such a circular would have to be made. How foolish to expect a community so composite as this one to be sanitary, when the first principles of sanitation are unknown to the majority of its members.

What society or corporation could exist without making known to its members its vital and governing laws? Every one of us must have violated these health-ordinances time and again, yet had we been apprehended for such violation ignorance would not have been a valid excuse. Medical societies and medical journals can do very much to inaugurate a practical system of hygienic education of the public, and to aid and maintain it. It is as necessary during ordinary times as in epidemics of smallpox and cholera. Respectfully,

M. V. BALL, M.D.
RESIDENT PHYSICIAN, EASTERN STATE PENITENTIARY, PHILADELPHIA.

[Certainly the Board of Health should have at hand, together, all of the ordinances that appertain to its functions as an administrative body, and it should further see that the community is made to know of the existence of these ordinances and of their requirements in order that they may be enforced, either voluntarily or upon the authority of the Board.—ED. NEWS.]

NEWS ITEMS.

The Medical Society of the District of Columbia will celebrate the seventy-fifth anniversary of its organization in Washington, on Friday evening, February 10, 1894. The following program has been arranged:

"Invocation," by Rev. Wm. A. Bartlett, D.D.

"Address by the President," Samuel C. Busey, M.D., LL.D.

"Address of Congratulation," by Theophilus Parvin, M.D., LL.D. (Representative of the College of Physicians of Philadelphia).

"Address—History of the Medical Society of the District of Columbia," by Wm. W. Johnston, A.M., M.D.

"Address—History of the Hospitals of the District of Columbia," by J. Ford Thompson, M.D.

"Address—History of the Medical Colleges of the District of Columbia," by Thompson C. Smith, M.D.

Mathews' Medical Quarterly, a journal devoted to diseases of the rectum, gastro-intestinal disease, and rectal and gastro-intestinal surgery, has made its first appearance. It is published at Louisville, Ky., and is owned and edited by Dr. Joseph M. Mathews, with Dr. Henry E. Tuley as Associate Editor and Manager. The first number contains 186 pages, and includes sixteen original articles by well-known writers, together with reports of society meetings, editorial articles, and abstracts from current medical literature. The editors request the names of all reputable surgeons in the United States that limit their practice to the treatment of diseases of the rectum. The new venture deserves to succeed.

The Effects of Medical Legislation.—At the last meeting of the State Board of Medical Examiners of the State of Washington, held in Seattle, there were twenty-two applicants for a license to practise, of whom twelve failed to pass the required examination and were rejected. The Board now requires a general average of 75 per cent. on all branches, a rise from its former standard, and soon the standard will be raised to 80 per cent.

Dr. Ch. E. Quinquaud, member of the French Academy of Medicine, Professor Agregé of the Paris Faculty, Physician to the Hôpital Saint-Louis, Chevalier of the Legion of Honor, died on January 9th, at the age of fifty-two years.

Adolf Heider, Assistant in Hygiene in the University of Vienna, died recently of meningitis in the sequence of an attack of influenza complicated by pneumonia.

Dr. Frank D. Beane, of New York City, died at Lake North, Fla., in his forty-third year, on January 6, 1894, of remittent fever.

Dr. Murdoch Cameron has been appointed to the vacant chair of Midwifery in the University of Glasgow.

Heubner, of Leipzig, has been elected the successor of Henoch in the chair of Pediatry at Berlin.

Dr. Paul Diday, the distinguished French surgeon, died on January 9th, at the age of eighty-three years.

Van Beneden, the celebrated Belgian naturalist, died recently at the age of eighty-five years.

Books and Pamphlets Received.

The Simple Dressing after Cataract-extraction. By T. E. Murrell, M.D. Reprinted from the Ophthalmic Record, 1893.

A Brief Review of the Attitude of Our Medical Schools in Relation to Matriculate and Graduate Studies. By R. Lowry Sibbet, A.M., M.D. Pamphlet. Carlisle, Pa.

Kentucky School of Medicine in the City of Louisville. Register of Students, 1893. Circular of Information, 1894.

Tattooing and Its Successful Removal. By A. H. Ohmann-Dumesnil, A.M., M.D. Extract from the New York Medical Journal, 1893.

Sectarianism in Medicine. By E. R. Cutler, M.D. Reprinted from the Boston Medical and Surgical Journal, 1893.

The Importance of Early Mastoid Operations in Acute Suppurative Otitis. By F. C. Hotz, M.D. Reprinted from the Chicago Medical Recorder, 1893.

Index-Catalogue of the Library of the Surgeon-General's Office United States Army. Authors and Subjects. Vol. XIV. *Sutures–Universally*. Washington: Government Printing Office, 1893.

A Consideration of the Paresthetic Neuroses. By Joseph Collins, M.D. Reprinted from the Boston Medical and Surgical Journal, 1893.

An Analysis of One Hundred and Twenty-five Cases of Chorea. By Joseph Collins, M.D. Reprinted from the Post-Graduate, 1893.

Address on the Germ-Theory of Disease, with Special Reference to Kochspiel. By D. Campbell Black, M.D. Pamphlet. Glasgow: Hugh Hopkins, 1891.

Inaugural Address to the Physiology Class in Anderson's College, Session 1891–92. By D. Campbell Black, M.D. Pamphlet. Glasgow: Hugh Hopkins, 1891.

A Practical Treatise on Diseases of the Skin, for the Use of Students and Practitioners. Third edition, thoroughly revised and enlarged. By James Nevins Hyde, A.M., M.D. Philadelphia: Lea Brothers & Co., 1893.

Transactions of the American Surgical Association. Vol. XI. Edited by DeForest Willard, M.D. Philadelphia: Printed for the Association and for sale by William J. Dornan, 1893.

Sarcoma of the Pia and Brain, Simulating Brain-tumor; Monospasm and Mono-paresis; Operation. By J. T. Eskridge, M.D. Reprinted from the Journal of the American Medical Association, 1893.

Obstructions to the Function of Micturition, and the Results. By R. L. Payne, Jr., M.D. Reprinted from the Virginia Medical Monthly, 1893.

The Misuse of Drugs in Modern Practice. By John T. G. Nichols, M.D. Delivered in Boston before the Massachusetts Medical Society, June 14, 1893. (Pamphlet.)

The Students' Quiz Series. Chemistry and Physics. A Manual for Students and Practitioners. By Joseph Struthers, Ph.B., D. W. Ward, Ph.B., and Charles H. Willmarth. Philadelphia: Lea Brothers & Co., 1893.

Text-book of Normal Histology: Including an Account of the Development of the Tissues and of the Organs. By George A. Piersol, M.D. Philadelphia: J. B. Lippincott Company, 1893.

Lectures and Essays on Fevers and Diphtheria, 1849 to 1879. By Sir William Jenner, Bart., G.C.B. New York: MacMillan & Co., 1893.

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ORIGINAL ARTICLES.

OPERATIONS FOR THE CORRECTION OF INVETERATE PES VARUS.[1]

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IN the treatment of the most severe cases of varus, the profession, as a rule, admits that operations on the bones themselves are necessary, and that these operations are to be either excision of the astragalus alone, or of a wedge-shaped piece of bone sufficient in size to allow straightening of the foot. The choice of procedures having been narrowed down to these two, I believe the wedge-shaped resection offers so many advantages as to command the preference. Excision of the astragalus alone I believe to be an unnecessary procedure when it proves effectual in removing the deformity; and when operation on the bones is required, the removal of this bone alone will not prove an efficient and satisfactory mode of treatment. I recently had a most satisfactory case illustrating the two operations.

The patient is a boy, twelve years of age, with marked varus of both feet. He had been unsuccessfully treated in infancy by division of the tendons. His right foot was turned inward until parallel to a line drawn through the two malleoli, and the sole was vertical (see Fig. 1). He walked on the outer border. The left foot was similar to the right, but the deformity was less marked in degree. On account of the right foot showing the more marked deformity, I operated on it by wedge-shaped resection, while for the purpose of making a comparison of the two operations, Dr. Goodman performed an excision of the astragalus on the left.

The plantar fascia of the right foot having been divided subcutaneously, the sole was thoroughly stretched and the incision for the wedge-shaped resection made from just anterior to the external malleolus to the tuberosity of the fifth metatarsal bone. The peroneus longus and brevis were pushed backward and the peroneus tertius forward. With a chisel and elevator a wedge of bone was then removed through the entire thickness of the tarsus. The anterior line of section passed through the cuboid bone and the posterior portion of the cuneiform bones. The posterior section traversed the anterior portion of the calcaneum and the neck of the astragalus. This enabled the foot to be brought perfectly straight, with the sole resting flat on the ground (Fig. 2). The foot healed nicely in this position, and never afterward troubled him.

FIG. 1

Right foot previous to operation.

FIG. 2.

Same foot after correction by wedge-shaped resection.

In the other foot the astragalus was removed by a long dorsal incision, and healing also occurred promptly. In this foot, notwithstanding the division of the plantar fascia and the anterior and posterior tibial tendons while the sole was brought into a horizontal position, the incurvation and hollowing-out persisted, so that when the operation was finished a considerable amount of deformity still remained (Fig 3).

FIG. 3.

Left foot after excision of the astragalus.

The results which I have seen in these as well as in many other cases, have so firmly convinced me of the superiority of the wedge-shaped resection, when judiciously and skilfully performed, that I think resection of the astragalus alone, as a means of treatment of these most obstinate cases of varus, should be absolutely abandoned. I see no field for it which is not better filled by other measures. Almost

[1] Read before the College of Physicians, Philadelphia, December, 1893.

all surgeons agree in admitting that the removal of some bony tissue is necessary to correct the malpositions that are sometimes found in cases between the ages of, say, twelve and fifteen or more years. The

Fig. 4.

Imprint of right foot after wedge-shaped resection.

Fig. 5.

Imprint of left foot after excision of the astragalus.

operations both of removal of the astragalus and of wedge-shaped resection have been largely abused, and the former more than the latter. Removal of the astragalus has obtained its greatest reputation in cases in which no operation on the bones themselves has been required. Even children a year and a half old, and under, have been subjected to that unnecessary mutilation. Those cases in which it has been successful in removing the deformity, I am disposed to regard as being curable by tenotomy, with forcible straightening under anesthesia, and the immediate application of a plaster bandage; this procedure being repeated if necessary.

As an evidence of what can be accomplished by conservative treatment, I show this boy of six years. On admission his feet were as illustrated in Figs. 6 and 7. They were directed inward toward each other, on a line passing through the malleoli; the soles were vertical, and he walked on the outer edge of his feet, with his fourth and fifth toes completely doubled under. By means of tenotomy and forcible straightening with the hands, under anesthesia, three times, and then applying plaster bandages, his feet, in the course of three months, were brought perfectly straight, braces being used to prevent relapse. This was a case in which many surgeons would have removed the astragalus, but events proved that a cure could be effected without such removal.

I also show you an astragalus removed by another surgeon from a child six years of age. The abnormal bending inward of the neck is well shown. When we examine the bone we find it so soft that I am able to thrust this pin through it in various directions with my fingers. What justification there can be for the excision of the astragalus in such cases I cannot see. The removal of this bone for the correction of pes varus seems to me to be a very illogical procedure. In a foot already shortened on its inner side, the main bone on that side is removed, while the outer side is allowed to remain intact. The deformity is not confined to the astragalus, but the condition and position of the calcaneum and cuboid are likewise altered. The main arch of the foot is composed of two subsidiary arches, an outer and an inner, which are united behind in the calcaneum. The inner arch comprises the calcaneum, astragalus, scaphoid, and cuneiform bones, with the inner three metatarsals. The outer is composed of the calcaneum, cuboid, and outer two metatarsal bones. The outer arch participates in the deformity to as great an extent as does the inner, if not to a greater extent, and when the astragalus bone of the inner arch is removed the outer arch is still left intact, and in these obstinate cases it is of sufficient strength to still retain the foot in its distorted position of inversion.

When one attempts, by removal of the astragalus alone, to correct a case that is suitable for operation, he at once finds that it is impossible to remove the deformity without proceeding farther; and, first, the external malleolus is chiselled off, then an osteotomy of the calcaneum or cuboid is per-

Fig. 6. Fig. 7.

Feet of a boy, aged six years, cured without operation on the bones.

formed, or, finally, a piece of bone is removed, the operation thus practically becoming a wedge-shaped resection. I asked a surgeon once if he could always bring the foot straight by removal of the astragalus, and he said "No." "Then what do you do?" said I, and he answered: "Go on removing bone until I can bring it straight"—and if the proper cases present themselves to the surgeon that is just what he must do. The greatest objection to the removal of the astragalus alone is that it is unnecessary in the less severe cases, and in the bad

ones it fails to remove the deformity. The foot is likely to remain inverted and to retain the projection of the dorsum and the exaggerated hollow of the sole which it possessed before the operation, and which is shown in Figs. 3 and 5. As time passes, the condition at the ankle will probably be satisfactory, but the inversion of the foot, if not carefully guarded against, may become worse, or at least fail to improve, and the patient still be badly crippled. I also believe that after excision of the astragalus at times—particularly if any marked motion remains at the ankle—control over the foot is more likely to be partially lost, causing the toes to drop and the foot to invert in the same manner as is seen in cases of paralysis of the extensors in anterior polio-myelitis. It is objected that wedge-shaped resection mutilates the foot too much, but this is not so, because it is only performed in the already extremely deformed cases. In this boy, the foot on which the operation of wedge-shaped resection was performed, although originally worse than the other, is not only a nice, straight, flat foot, but it is absolutely greater in length than the one in which the astragalus only was excised. The difference in length in favor of the wedge-shaped excision is fully three-quarters of an inch. In fact, the deformity remaining in the foot in which the astragalus has been removed is so marked even now, two years after the operation, that it is necessary for the boy to wear a brace to keep the foot from again becoming worse, as without it the foot turns in and the boy walks on its edge, and, if he persisted, would soon have it completely turned over so as to walk on its dorsum. The condition is so dubious that if not carefully watched it may even yet require an osteotomy or resection of bone to such an extent as may be sufficient to make it a respectable and reliable organ of locomotion.

The tendency among orthopedic surgeons in the treatment of marked cases of club-foot is toward conservatism and the avoidance of operative procedures on the bones; but the plaster cast that I now show you (Fig. 8) of my first case of wedge-shaped resection, from a man aged twenty-one years, will, I am sure, convince you that such enormous and inveterate distortions and deformities cannot be satisfactorily treated by mild measures alone.

Mr. Brodhurst, in his recent brochure on the treatment of club-foot, strongly condemns tarsotomies and tarsectomies. The utmost limit to which he is willing to go is shown by the following quotation: "There are, however, certain cases, and among thousands perhaps as many as could be counted on the fingers of one hand, where it would be permissible to remove the astragalus." He therefore admits that operations on the bones are sometimes justifiable, but I cannot agree with him, for the reasons given, in thinking that the operation chosen should be the removal of the astragalus alone. He quotes Mr. Walsham, as follows: "I have always taught that, though I firmly believe these intractable grades of the deformity can only be cured by tarsectomy, at the best it is but a bad

Fig. 8.

Club-foot in a man aged twenty-one years.

Fig. 9.

Same after wedge-shaped resection.

job." From this I must dissent, and I do not believe that any fair minded surgeon would characterize the results in the cases which I have shown as being, to use Mr. Walsham's expression, "a bad job." (Fig. 9.)

Dr. Ogston is also quoted to the effect that "Tarsotomy by subcutaneous puncture and chain-saw was performed five times, but is now given up. Excision of a wedge of the tarsus was performed three times, and, though it looked pretty, was not useful." If reducing very greatly the amount of deformity and enabling the patient to conceal the remainder, and giving him a painless and satisfactory foot on which he can walk without the aid of braces, is not a "useful" procedure, then I would like to know what constitutes usefulness. If the operations cited were all performed on a single case it would be a hopeful man indeed who would expect a "useful" foot to result, and if Mr. Brodhurst forms his opinions of the value of the operation in properly selected cases on such procedures as the foregoing, and the method as witnessed by Senn, and described by him in his *Four Months Among the Surgeons of Europe*, then we can readily account for his bad opinion of it. As for myself, I respectfully decline to accept such chain-saw surgery as being the criterion by which to judge of the value of this operation.

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The Medical Society of the District of Columbia will celebrate the seventy-fifth anniversary of its organization in Washington, on Friday evening, February 16, 1894 (not February 10, as inadvertently stated in The News of February 3).

IS OPERATION DEMANDED IN ALL CASES OF APPENDICITIS?—THE BEST TIME TO OPERATE.[1]

By A. MORGAN CARTLEDGE, M.D.,
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Disease of the vermiform appendix is probably attracting more attention at the present time than any pathologic condition within the abdomen. So-called typhlitis and perityphlitis have ever been considered common maladies, but the revelations of the appendix as a disease-producing factor in these troubles are of very recent years. If the number of the human family that have been quietly borne to mother earth with the physician's verdict of death from peritonitis, inflammation of the bowels, etc., could be traced, the aggregate would be appalling, and yet modern operative surgery and modern post-mortem investigation demonstrate beyond doubt that 95 per cent. of males, and not a few females in this list, perished of conditions having their origin in the vermiform appendix. The idea that the cecum and its supporting serous and connective tissue are the most frequent seat of trouble had become so fixed in the mind of the profession that every advance from this foggy pathology met with strong resistance. When Sands, Treves, and others called attention to the frequency of the appendix as a starting-point in these inflammations, their statements attracted little attention and in many instances were denied. Again, when surgery demonstrated that disease of this structure was essentially intra-peritoneal, hence the organ in most cases was an intra-peritoneal one, we were charged with stretching the normal human anatomy in order to bring within the abdomen a structure that did not belong there.

Most modern surgeons have an abiding faith in the surgical maxim that whenever pus is believed to be present in the tissues or organs of the body an effort to remove it should be made. Hence the new pathology of a very old and frequently fatal malady inspired surgeons to attempt some radical means of relief. In the enthusiasm that followed, probably some lives were sacrificed that would otherwise have been prolonged, yet this feature is one that has occurred in the evolution of every great life-saving operation in surgery.

Perfection in technique can only come from individual experience and a knowledge of the work of others. The same principle applies to numerous other requisites of success, such as diagnosis, advisability of operation, and time of operation.

The diagnosis of appendicitis has been about as nearly perfected as that of most other surgical lesions; the question to be settled at the present time is as to the prognosis and treatment. If appendicitis had a more uniform clinical course, discussions would be less heard of, and yet most surgical conditions have just as many clinical and pathologic variations as this disease. It matters little to the surgeon whether a tuberculous osteitis in the head of the tibia is going to remain localized for some time, or whether it has perforated the periosteum, medullary canal, or the joint; all he recognizes is his diagnosis; his treatment is based upon such plain surgical principles as not to permit of discussion. Yet, fifteen years ago such cases were treated by various expectant methods until operations were demanded, often too late to be of use. Why did surgeons and physicians formerly apply iodin-blisters and liniments to inflammatory foci in bone? Simply because the necessary rest of such treatment often caused an abatement of symptoms and gave a false impression of cure. The patient walked again without pain, but if he lived long enough inevitably had an aggravated recurrence of his trouble.

At the present time we are repeatedly told that appendicitis rarely kills, and that nearly all cases spontaneously recover. The pathology of a disease is the only true keynote to its rational treatment. Probably the best classification of appendicitis is:

Catarrhal	(simple).
Ulcerative	(from tuberculosis). (from foreign bodies).
Perforating	(from ulceration). (from strangulation, the result of volvulus of the appendix).

The classification deals strictly with the changes occurring in the appendix, and should be considered separately from the peritoneal and other conditions that may ensue, and that may cause well-marked variations in the clinical course of the disease. From a low-grade ulceration, say the result of the presence of an enterolith, the irritation, long-continued, will probably lead to extensive circumscribed peritonitis with a firm tumor composed exclusively of recent fibrous tissue. If imbedded in such a mass, the walls of the appendix give way, the pus that forms is rather securely encapsulated, and may be days, weeks, even years, finding an outlet. In fact, as is often the case, if the bacillus coli communis predominates in the pus, it may remain so encapsulated until it receives a new impetus of irritation. Case VIII of my operated cases illustrates this:

W. D., a boy, eleven years old, was seized with pain in the appendicular region at 6 P M. On being questioned by his parents he admitted that another boy had struck him there with a ball made of partly melted snow during the afternoon. This was on Wednesday; the family physician was summoned

[1] Read before the Southern Surgical and Gynecological Association, 1893.

Thursday morning and found the patient with flexed legs; the abdomen swollen and very tender, especilly in the right side rather high up; there was great pain, a rapid pulse, and a temperature of 103°. Hot fomentations were applied and opium was given. On the evening of the same day the boy was no better and a cathartic was given. On Friday morning the pulse was 130, temperature 103°, abdominal swelling increased and general, and no movement of the bowels; salines were given, followed by both low and high enemas, but there was no response. I saw the patient in consultation Friday evening at six o'clock, and found him with a pinched expression, almost moribund, the pulse from 140 to 150, enormous general abdominal distention, jerking respiration, and frequent projectile vomiting of green serum. Diagnosis: probable intestinal obstruction from intussusception or volvulus.

I never refuse (as my statistics of death show) to operate provided there is any pulse, if I believe intestinal obstruction exists; hence, with an explanation of the situation I did so in this case. On opening the tense belly, by a median incision, there was a gush of fetid pus and distended coils of intestine. A few gallons of hot water were used for irrigation and an attempt made to locate the trouble. Dense adhesions were encountered on the right side, extending from the iliac fossa behind and beside the ascending colon, as high as the liver. These adhesions were clearly old. Breaking through with my finger, fetid pus in increased volume came from that side. I had only been at work some five minutes when the condition of the patient warned me that I must quit or have a death upon the table. I hastily flushed the cavity, made additional drainage-points in which gauze was inserted, surrounded the tube with gauze from the median cut, and closed the abdomen. The little patient died at four o'clock the following morning from a continuation of the sepsis and intestinal paresis. The autopsy revealed numerous old adhesions and an abscess-cavity around the appendix, which had nearly sloughed away. The mesenteric glands were enlarged, and the evidences were clear of a general suppurative and adhesive peritonitis. After the operation, and before the autopsy, I suspected the trouble, for I felt the enlarged glands and noted the ancient character of the adhesions. The family was questioned as to the boy's history. He never was sick but once before, and that was eight months previously, when he had what the attending physician (not his present one) called typhoid fever. During this sickness, which lasted two weeks and came on suddenly, he complained of great pain in the right side. How many cases of this disease have been treated for typhoid fever cannot be told.

Explanations to the family were very much in order in this case, as they naturally believed the boy was killed by the ice-ball thrown by his companion. This boy died of peritonitis, the result of a ruptured abscess around an old perforative appendicitis. The rupture was no doubt precipitated by the blow of the ice-ball. Change the age and principle of crime involved, and we would have an interesting legal point to decide.

Two other cases under my observation, developed within a few hours after an injury, and gave the history of being below the health-standard prior to the accident, and left little doubt in my mind as to the true part that injury plays as an exciting cause in this affection.

To return to our classification. We know more about the pathology of ulcerative or suppurative appendicitis than we do of the catarrhal variety. Why? Because the cases not operated upon and that recover are mostly called catarrhal. These are the cases that progress with little pain, very little fever, 101° F. as a maximum temperature, and a tumor that subsides. These cases are the pride of the poultice-and-opium doctor. I do not believe that it is possible for a catarrhal inflammation, which must of necessity be confined to the mucous coat of the appendix, to produce such peritoneal proliferations. If there is anything in reason, anything in the similarity of action of like tissues under the same conditions, then this is impossible; for nowhere in the body will a catarrhal inflammation of mucous membrane cause dense deposits in the adjacent peritoneum. By catarrhal appendicitis is meant that possible variety found at autopsies after death from other causes, and also found by some surgeons after operating upon individuals with pain in the right iliac fossa.

Our knowledge of catarrhal inflammation of the appendix is, then, derived from two sources: *First*, the cases not operated upon and called so, though never seen; *second*, from cases operated upon by surgeons who find the appendix not diseased, or who, finding it tense and distended without peritoneal adhesions, call the condition catarrhal appendicitis. If many of the latter cases were examined, ulcerative changes would be found taking place, with, probably, stenosis at some part of the lumen, the distal part rapidly filling with the unemptied secretion of the appendix. Such an appendix, if there was great pain, would probably have ruptured before adhesions formed. The result of the rupture is one of two things, depending upon the composition of the effused liquid: If free from pus-forming organisms, circumscribed peritonitis, and later, abscess. If containing pus-organisms from intra-appendicular suppuration, a diffuse fatal peritonitis would follow.

Ulcerative appendicitis must be either tuberculous or traumatic, the trauma resulting from the presence of foreign bodies and enteroliths, usually the latter. The tuberculous variety (probably more common than formerly supposed) would give rise only to acute symptoms as the result of cicatrization and stenosis with distal distention, or as a result of secondary infection with pus-organisms, either of these results favoring perforation. This is essentially the

chronic variety, but it will eventually lead to peroration in the ways indicated.

Volvulus, or rotation, furnishes most of the *furor* cases of appendicitis, those that come without premonition. This condition properly should not be classed as appendicitis, the appendix giving way as a result of rapid necrosis from arrested blood-supply, and the general peritonitis that ensues being almost the first symptom observed. I have seen one such case saved by timely operation. There was so little time between the rupture and the operation (four hours) that an absence of peritoneal inflammation permitted a perfect examination as to the true nature of the trouble. One such case throws more light upon the pathology of the disease than many hundreds operated upon at the usual time when the origin of the appendicular lesion is much obscured by peritoneal changes.

As to the prognosis, while we accept as true all the favorable statistics offered for appendicitis, they are favorable from one point of observation only; that is as to the first attack, and then favorable only so far as the individual's life is concerned. When physicians come to view inflammation of the vermiform appendix in the proper light, the prognosis assumes a very different shade. We are accustomed to think of the appendix becoming diseased in the ways mentioned, then a perfect resolution taking place, and except for a slight predisposition, the individual being as healthy as before. This is certainly far from the truth. We should consider any appendix once so affected as to deserve the name of appendicitis, whether from tubercle or trauma, a permanently diseased structure; and fancied cures are but quiescent states, the result of very easily recognized conditions. Nature does wonders to bar the progress of this common affection, to render its results bearable by adjacent structures, and at last to get rid of its evil consequences; yet the plain fact remains that if there is no excuse for allowing removable tuberculous foci to remain elsewhere in the body; if it is considered good surgery to remove pus and pus-forming structures elsewhere, why is it good surgery to treat this disease by expectant methods?

If we could trace our so-called first-attack cases of appendicitis through subsequent ones, we would say the prognosis not only as to health and comfort, but also as to life, is bad, and very bad. A man has the trouble three, four, or five times, apparently recovers, and all are counted as cures, probably by different physicians. Finally he dies in an attack; the death is counted but once, and sometimes not then, for, as is often the case, if death results from the rupture of an unrecognized appendicular abscess, or from diffuse peritonitis after perforation, the chances are that the cause is never suspected and death is recorded as occurring from peritonitis.

There are thousands of physicians who know how many patients they have had recover from appendicitis without operation, but of this number few know the cause of the peritonitis that has carried away thousands of other patients.

Every man's experience, whether his best guide or not, will remain his most impressive one. If I should review condensedly the evolution of my views as to operative interference in appendicitis, it would be about as follows:

First. I thought operation rarely indicated.

Second. It would be well to distinguish between suppurative and catarrhal cases, operating on the former and not in the latter.

Third, and last. My present belief is that every case not barred by surgical limitations should be operated upon.

As to the *time for operation*, my experience again has no doubt been that of many others, namely, one of changing ideas. Less than a year ago I would have replied to this question by saying, In so-called recurring appendicitis, operate between the attacks. When perforation occurs with abundant adhesions, wait until anterior peritoneal adhesions form in order to be sure of working in a cut-off space. The time is generally in this type of the disease from the third to the tenth day, depending upon the intensity of the inflammation. This last rule was a pet one of mine. In the rapidly-perforating case or when a peritoneal abscess ruptures in the free cavity, operate at once.

My present rule is, provided the symptoms are not too urgent, to operate as soon as the bowels can be thoroughly moved. This opinion is based upon the accidents observed while waiting, and the knowledge that our technique is now competent to deal successfully with all clinical types of the disease, except the majority of those complicated by diffuse septic peritonitis, and these are they that most often ensue from delay.

CLINICAL MEMORANDA.

VAGINAL HYSTERECTOMY FOR CARCINOMA OF THE UTERUS PERFORMED BY ENUCLEATION WITHOUT HEMORRHAGE.

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ON November 16, 1893, I was invited, in consultation with Dr. J. F. Francis, to see Mrs. S., a widow, colored, aged seventy-two years. The diagnosis of uterine carcinoma had been made by the attending physician, and the object of the consultation was to devise some means by which the hemorrhage from the uterus (which had been very profuse) could be checked. The patient had had a number of attacks of hemorrhage from the uterus

prior to my being called in, and had one on November 15, 1893, which nearly proved fatal.

On making an examination the characteristic odor, the indurated cervix, and irregular ulcerated margins, left no doubt of the correctness of the diagnosis. The woman was removed to the Freedman's Hospital on November 18th, and on November 22d the operation for her relief was performed. It had been my intention to perform the usual operation of vaginal hysterectomy, well described by Dr. A. J. McCosh, in THE MEDICAL NEWS of November 4, 1893; and by Dr. E. E. Montgomery, in THE MEDICAL NEWS of November 18, 1893.

Twenty-four hours previous to the operation, I was placed in possession of a paper written by Dr. E. H. Pratt, of Chicago (a homeopathic physician, I believe), giving the histories of eight cases operated upon by him in which he had made a transverse incision just above the os uteri, into the layer of areolar or loose layer of cellular tissue that lies between the uterus and the vaginal mucous membrane covering the cervix, and by careful dissection had enucleated the uterus. The idea seemed to me to be admirable and I determined to forthwith put it into execution.

On November 23, 1893, in the Howard University surgical amphitheater, assisted by Drs. C. B. Purvis, F. J. Shadd, E. A. Balloch, E. F. King, J. F. Francis, and Collins Marshall, after thorough disinfection of the genitalia the operation was performed. The jagged irregular margin of the cervix was drawn down by the vulsellum, and a transverse incision made into the cervix uteri, about half an inch above the margin of the os uteri. The incision was made through the epidermic layer and into the loose areolar cellular tissue lying between the epidemic covering and the body of the uterus. Then by picking up a small quantity of areolar tissue at a time, and dividing it by means of the curved, sharp-pointed scissors used in gynecologic work, the enucleation was performed. This process was continued around the circumference of the neck and body of the uterus, keeping, of course, the points of the scissors closely in contact with the organ, until the layer of epidermis and areolar tissue was gradually peeled upward from the neck and body of the womb. In this process material aid was rendered by the assistant drawing down by means of the vulsellum the neck of the uterus, as the process of enucleation progressed, until the organ was gradually brought down into full view. During the latter part of the operation, a blunt instrument (a retractor) was used to peel off the peritoneum from the anterior and posterior surfaces of the uterus, in order to facilitate its removal. The most difficult part of the operation was the separation of the womb from the dense layer of cellular tissue that immediately surrounds the cervix, at the point immediately over the internal os uteri. The rest of the enucleation was comparatively easy.

As is well known, the bloodvessels of the uterus lie in this loose mesh of areolar or cellular tissue that surrounds the organ, and the great advantage of the operation I have described is that it almost entirely prevents hemorrhage. I did not ligate a single bloodvessel during the operation, nor was I obliged to use torsion, or, in fact, any other of the means that are usually resorted to in surgical operations to check hemorrhage. There was, of course, some oozing of blood, but nothing that could be called a hemorrhage. The operation was a tedious one and occupied forty-eight minutes. I feel quite certain that on other occasions it could be performed in much less time. The latter stage of the operation was very carefully carried out in order to avoid wounding the bladder in front and the rectum behind; neither of these organs sustained any injury during the operation. The atrophied remains of the broad ligaments and Fallopian tubes were dissected off the fundus of the uterus and remained in the cavity of the abdomen after the operation. The last step of the operation was the peeling off of the peritoneal covering from the fundus and body of the uterus, which was successfully accomplished without injury to the peritoneum and without opening the peritoneal cavity. The cavity in the abdomen formerly occupied by the uterus was washed out with weak sterilized carbolic solution, and a tampon of iodoform-gauze, five inches in length and about one inch in diameter, was introduced into the opening made by the operation.

On the evening of the operation, November 22, 1893, at 9 P.M., the temperature was found to be normal, and the pulse 86. On November 23d, the temperature, at 12 M., was 98.8°; the pulse 84. The woman had vomited a number of times during the night; she was given lime-water and milk and cracked ice in small quantities. The temperature in the evening was 98.8°; the pulse 86. Mustard sinapism to the epigastrium was ordered. There was a slight discharge of bloody serum from the wound. On November 24th the temperature at 12 M. was 98.9°; the pulse 86. The woman was much more comfortable, and vomiting had not occurred since the night before. There was a slight discharge of serum tinged with blood from the vagina. As there was no odor from the discharge, it was deemed best to leave the iodoform-gauze tampon in place for another twenty-four hours.

The subsequent history of the case was uneventful. The highest temperature reached was three days after the operation, when it reached 102.8°, but it fell the next day to the normal point.

Vaginal antiseptic injections were used twice a day, and the tampon was finally removed on the fifth day after the operation.

The patient was kept in bed for three weeks after the operation. Her convalescence was slow but steady, and she was finally discharged from the hospital on January 4, 1894, apparently perfectly well.

This operation (enucleating or peeling out the uterus from its peritoneal coverings) is one that, it seems to me, ought to supersede, in cases of carcinoma of the neck of the uterus, every other method of performing vaginal hysterectomy.

It is ridiculously simple in principle and by no means so difficult in practice as it would seem to be. Fortunately for the success of this operation, the uterine arteries lie in the loose mesh of areolar or cellular tissue which immediately surrounds the neck of the uterus, and from thence send their branches transversely into that organ. By introducing the points of the scissors carefully into the cellular tissue surrounding the cervix, it can be gradually snipped off without wounding the main trunks of the vessels, and the smaller branches are torn across and contract in great measure during the process

of dissecting them off. As I have said, I did not find it necessary to ligate a single artery during the operation.

It should be remembered that the advanced age of the patient rendered it a very favorable case for the operation. As the menopause had long been past, the atrophied condition of the Fallopian tubes and broad ligaments rendered them easily removable without the risk of dangerous hemorrhage. If, however, this operation should be performed upon a young woman during the activity of the menstrual function, it is very obvious that the ovarian arteries at least would probably require ligation, and that the cavity of the peritoneum would necessarily be opened with the attempt to sever the attachments of the broad ligaments and appendages.

The ovaries and Fallopian tubes can easily be removed during this operation, by dissecting closely to these structures, and the rent in the peritoneum can be closed with aseptic catgut ligatures. If hemorrhage should occur from bloodvessels during the operations, these vessels can be readily ligated or twisted, as the eversion produced during the enucleation of the uterus brings them readily into view.

The absence of shock and hemorrhage seems to render this a most desirable operation for the removal of the uterus in cases of carcinoma, and it seems to me that if carefully performed, scarcely any mortality should attend it.

INFLUENZA FOLLOWED BY PLEURITIS AND ENDOCARDITIS.

By AUGUSTUS A. ESHNER, M.D.,
ADJUNCT PROFESSOR OF CLINICAL MEDICINE IN THE PHILADELPHIA POLYCLINIC.

The case herewith reported is of interest as illustrating the diversity of complications observed in the course of influenza. It can be truly said that there is scarcely an organ or a structure that has not in one form or another been made to feel the influence of the poison of this remarkable and virulent disease.

J. McG., a laborer, twenty-five years old, presented himself at the Polyclinic in December, 1891, with the symptoms of a mild attack of influenza, which readily yielded to the administration of two grains of quinin with three grains of antipyrin in capsules. Physical examination at this time showed the pulmonary percussion-resonance to be unimpaired and subcrepitant râles to be audible at various parts of the chest, upon both sides, anteriorly and posteriorly. The man was in a reasonable time entirely relieved of his symptoms; but three months later he returned with a history of pain in the left hypochondrium of two weeks' standing, radiating to the shoulders and accompanied by sharp pain shooting down the left arm.

There was present a slight cough, with an occasional sense of chilliness. Upon physical examination dulness upon percussion was found upon the left side of the chest, extending anteriorly from the level of the fourth rib in the nipple line and posteriorly from the level of the spine of the eighth dorsal vertebra to the base of the chest; in this area the breath-sounds could not be heard, and vocal resonance and fremitus could not be elicited. The area of cardiac percussion-dulness was unchanged, although the heart-sounds were less well heard at the apex than at the base. The patient was directed to go to bed, to restrict himself to a dry diet, to apply a cantharidal plaster to the left side of the chest, and take ten grains of potassium iodid three times daily.

A week later the percussion-dulness on the left side was found to have risen to the level of the third rib anteriorly and the fifth dorsal spine posteriorly. The patient was now admitted to the Polyclinic Hospital, and remained for a month. During this time a systolic murmur appeared at the aortic valve, which persisted for some weeks, gradually growing fainter, until it finally disappeared. The temperature was elevated and pursued an irregular course; the patient complained a good deal of pain. The treatment consisted in the administration of alkaline diuretics, hydragogue cathartics, and the application of a blister over the heart. The fluid in the left pleural cavity was gradually absorbed and dense adhesions formed, as indicated by the substitution of dulness on percussion for the previous flatness and the renewed transmission of the respiratory and vocal sounds.

After dismissal from the hospital the patient slowly but progressively improved, and now, after the lapse of two years, is well, except for a syphilitic infection, recently acquired, and for the bone-pains and headache of which the man again presented himself. On physical examination it is found that the left shoulder has sunk to a lower level than the right; a right lateral curvature exists in the dorsal region, and a compensatory left lateral curvature in the lumbar region. The percussion-resonance is impaired over the entire left side of the chest, while the breath-sounds seem distant and the vocal resonance is muffled. The area of cardiac percussion-dulness appears normal, while the action of the heart is quite rhythmic, and its sounds are clear.

Though the case was not under constant and continuous observation, I am convinced that the sequence of events was an attack of influenza, followed by pleural and endocardial inflammation. Influenza is generally admitted to be an infectious disease, and an abundant experience has demonstrated that it is one of those of which one attack rather predisposes to than confers exemption from subsequent attacks, so that it is not impossible that in the case reported there may have been two attacks of influenza, of which the second was complicated by the inflammation of the serous membranes. Clinical testimony is accumulating to show that the serous membranes are particularly prone to suffer from the intoxications resulting in the course of the various infectious diseases.

MEDICAL PROGRESS.

The Inch-and a-half Incision and Week-and-a-half Confinement in Appendicitis.—At the recent meeting of the New York State Medical Society, Dr. Robert T. Morris stated that we had recently learned four principal things relative to appendicitis, and he was now asking the members of the profession to accept a fifth point.

First. Appendicitis is of such common occurrence that every general practitioner has many cases in his *clientèle*.

Second: Multitudinous forms of abdominal inflammation are symptomatic of appendicitis.

Third: Statistics show that late operation does not give much encouragement.

Fourth: Early operation, or operation in the interval between attacks, is an operation with trifling mortality (with none at all in Dr. Morris's experience). There is, however, danger of ventral hernia if a long incision is made.

The fifth point is this: A long incision is not necessary in cases of appendicitis that are operated upon at the outset of the inflammation, or, as a rule, in cases operated on in the interval, and there will be no hernias and no permanent scars if the surgeon will accept as a standard an incision one inch and a half in length, the divided structures of the abdominal wall being united separately with fine catgut. The stump of the appendix is buried with Lembert sutures. The abdominal scar disappears entirely, so that at the end of a few months it cannot be seen. The death-rate has been *nil* in cases in which suppuration was not present, and diagnostic alertness has so increased that it is unusual to find pus. Attention was called to the danger of intussusception of the ileum from the use of sodium carbonate for reversing peristalsis of the bowel. To induce such peristalsis, sodium chlorid is to be preferred.

Although there is strong opposition to the plan of removing an infected appendix just as soon as it is discovered, this opposition must fade away when physicians generally will have learned that appendicitis is an infectious exudative inflammation, which does not subside with the disappearance of the symptoms. Dr. Morris has removed a large number of appendices from patients who felt perfectly well, but who could not obtain life-insurance, or who feared recurrence, having had a previous attack of appendicitis. In all of these cases destructive processes were found in progress. Sometimes there was a slowly progressing necrosis of the lymphoid tissue of the appendix; sometimes tuberculosis or carcinoma was found insidiously beginning at the seat of the old inflammation; sometimes adventitious bands set snares for bowel; and proliferating endarteritis, which must eventually lead to gangrene of the appendix, was common in very mild chronic cases.

Appendices that appear upon macroscopic examination normal, may, upon bacteriologic investigation, prove not to be so. Dr. Morris has removed two or three appendices which were apparently perfectly normal, but the patient's symptoms all disappeared after the operation, and cultural and microscopic examination of these specimens showed that they were dangerously infected, the mucosa and adenoid tissue being in process of destruction by the colon-bacillus.

Dr. Morris stated that when the inch-and-a-half abdominal incision is employed in the removal of infected appendices, patients leave the hospital at the end of a week and a half. If an incision two inches long were made, the patient would not be ready to leave until fourteen days after the operation, and if the incision were from two and one-half to four inches long, eighteen days would be required for repair.

By immediate operation in acute cases was not meant on the following day, but in the following hour.

The Visual Fields in Cases of Hysteria.—As the outcome of an elaborate study, J. K. MITCHELL and G. E. DE SCHWEINITZ (*Journal of Nervous and Mental Diseases*, vol. xix, No. 1, p. 1) arrive at the conclusion that achromatopsia, or loss of color-sense, is not observed in cases of hysteria in the United States, although reversal in the normal sequence of the colors, so that the red field is the largest, is usually present when there is anesthesia. That the disturbance of the color-sense and the anesthesia are, however, not related to one another is proved by the fact that in some cases of universal anesthesia there is no alteration in the visual fields. The green field is, relatively at least, more frequently contracted than the others. When the differentiation between certain types of neurasthenic and hysteric patients is difficult, the presence of disturbance in the color-sense may prove of diagnostic import: it is less likely to be present in the former than in the latter. Its absence is of little significance, as it may not be found in typical cases of hysteria, while it may be present in cases of neurasthenia. It is possible that in the rare cases of hysteric unilateral or general hyperesthesia it will be found that colors are more accurately appreciated than is normal, and that the color-fields are correspondingly enlarged. The violence of the hysteric manifestations bears no relation to the disturbance of color-sense. Some of the following changes, so far as the field of vision is concerned, are likely to be present in cases of hysteria: Simple contraction of the color-fields, with unaffected form-fields; contraction of the fields for both color and form, the green field being relatively more greatly contracted than the others; partial or complete reversal of the normal sequence in which colors are appreciated, most commonly that variety in which the red field is greatest in extent (under these circumstances the color-fields may be normal in extent, sometimes even wider than is normal, or there may be an associated contraction of all of the color-fields); unusual obscuration of portions of the visual field, for example in the form of hemianopsia or greater contraction of the field on one side than on the other, the greater contraction usually being on the same side as the anesthesia.

Carcinoma of the Stomach in the Sequence of a Round Ulcer.—KOCH (*St. Petersburger medicinischer Wochenschrift*, 1893, No. 43, p. 385) has reported the case of a pregnant woman who presented indubitable symptoms of round peptic ulcer of the stomach, which improved with the termination of pregnancy and careful dietetic treatment. With improvement the dietetic restrictions were relaxed and soon hematemesis and other symptoms of gastric ulcer reappeared. In the course of time symptoms of pyloric obstruction developed, which were at first believed to be dependent upon cicatricial contraction at the site of previous ulceration, until, however, it was observed that the reaction of the gastric contents to tests for hydrochloric acid, which had always previously been present, could no longer be elicited, while at the same time the reaction to tests for lactic acid became more marked. Careful palpation failed to demonstrate the presence of a tumor. Operation had been early advised, but was not acquiesced in until the condition of the patient forbade its undertaking, and amid the manifestations of progressive emaciation the patient died of heart-failure. Upon post-mortem examination the stomach

was found to be dilated, its mucous membrane coated with mucus, and presenting a mammillated appearance. At the pyloric extremity the mucous membrane was scarred, and thickened and histologic examination disclosed the presence of cylinder-celled carcinomatous infiltration.

Tubercle-bacilli in House-dust.—MILLER (*British Medical Journal*, No. 1724, p. 62) has reported an instance in which he succeeded in finding tubercle-bacilli in the dust from a house in which tuberculous persons had resided. A lady with her five daughters, four of whom were most of the time at school, took up her residence in a house in which six years previously there had lived a gentleman who had died of pulmonary tuberculosis but a short time after removing from the house. For the next six years the house was occupied by an old lady, who died, but not from pulmonary tuberculosis. Within a year of moving into the dwelling the mother became tuberculous and died at the end of three years. During her illness the eldest daughter displayed symptoms and signs of pulmonary tuberculosis, and left home for six weeks, returning apparently well and remaining well thereafter. A few months after the death of the mother the second daughter, who had not long been away from school, displayed similar symptoms; but she also recovered after leaving home. Several years later the third daughter, soon after leaving school, presented consolidation of the left apex and died within a short time. Stained cover-glass preparations made from dust obtained from the dining-room of the house in which the unfortunate family lived disclosed the presence of tubercle-bacilli in considerable numbers.

THERAPEUTIC NOTES.

The Treatment of Pityriasis Auris.—ALBESPY (*La Semaine Médicale; Wiener med. Presse*, 1894, No. 2, p. 67) describes pityriasis auris as a desquamating dermatitis of the external ear, attended with itching, tinnitus, impairment of hearing, a sense of heat, and sometimes facial neuralgia. The affection does not, as a rule, appear before the twentieth year of life, and usually involves the ear by extension from the hairy head. The treatment consists in pulling out or cutting off the hairs at the entrance of the external auditory canal and removal of the scales by irrigation with a tepid solution of boric acid, followed by the introduction deep into the auditory canal of a cotton tampon saturated with a 5 per cent. solution of argentic nitrate, which is permitted to remain for twenty-four hours. This procedure is repeated until desquamation no longer occurs and the walls of the canal have become smooth and soft. Now, tampons saturated with the following mixture are to be employed:

℞.—Acid. salicylic. . . . . ʒjss.
Balsam. canad. . . . . ʒss.
Collodion. . . . . ʒj.—M.
S.—To be used renewed every four or five days.

The treatment is concluded by the insufflation of air once or oftener. The general condition must not be ignored and arsenic is to be administered.

The Treatment of Rupture of the Uterus.—From an analysis of reports of 230 cases of rupture of the uterus, MERZ (*Archiv f. Gynäkologie*, B. xlv, H. 2, p. 181) comes to the conclusion that when the lower extremities and the pelvis of the fetus have entered the abdominal cavity of the mother, the head remaining in or over the pelvis, delivery should be accomplished through the natural channels by means of forceps or perforation and craniotractor. If the head, or entire body of the fetus, has entered the abdominal cavity, version and other obstetric procedures should not be undertaken; but, to avoid enlarging the perforation of the uterus, celiotomy should be immediately undertaken, and the fetus delivered through the abdominal incision; and the perforation should at once be sutured. If delivery has been accomplished through the natural channels, celiotomy and suture of the perforation, under moderately favorable conditions should be practised at once. If the conditions forbid the performance of celiotomy, drainage with iodoform-gauze should be provided for, without previous irrigation. If the uterus is badly lacerated, or if septic endometritis has developed, the removal of the uterus should be practised.

The Treatment of Erysipelas with Chlorphenols and Bromphenols.—TCHOURILOW (*La Semaine Médicale*, 1894, No. 2) has employed topical applications of 1, 2, and 3 per cent. ointments of orthochlorphenol, parachlorphenol, and orthobromphenol in the treatment of erysipelas, with satisfactory results. The ointment is carefully rubbed into the involved area for about a minute twice a day. The friction is followed by tingling, sometimes by a sense of painful pricking, which disappears in the course of two or three minutes. Of 25 cases thus treated a cure ensued on the second day in 6; on the third day in 8; on the fourth day in 3; on the sixth day in 2; on the seventh day in 4; and on the eighth day in 2. It is further believed that good results could be obtained by subcutaneous injection of the same agents in aqueous solution.

For Pulmonary Tuberculosis STRIZOWER (*Wiener klin Wochenschr.*, 1894, No. 3, p. 43) recommends inunctions of mercurial ointment. A half-dram of the ointment is rubbed into the skin daily, and a warm bath is taken after every fourth inunction. It is not claimed that the treatment is infallible or universally applicable. In cases in which it fails to do good, however, it at least does no harm.

For Coryza.—

℞.—Betol . . . . . ʒijss.
Menthol . . . . . gr. xv.
Cocain hydrochlorate . . . gr. ix.
Powdered roasted coffee . . ʒjss.
Mix and use as a snuff.

GRELLETY, *Sem. Méd.*, No. 72.

For Gastric Ulcer.—

℞.—Bismuthi subnitrat. . . . ʒjss.
Chloroformi . . . . . f ʒss.
Aquæ . . . . . f ʒx.—M.
S.—Two tablespoonfuls, from three to six times daily.

STEPP, *Wiener med. Presse*, No. 51.

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THE "CONTAGIOUSNESS" OF LEPROSY.

As we have already had occasion to point out, some confusion still exists as to the precise interpretation of the terms "infectious" and "contagious." Modern usage has very much limited the application of the qualification "contagious," and for practical purposes the word might well be permitted to fall into disuse. In its simplest, and at the same time strictest, sense an infectious disease is one that is transmissible or communicable from person to person, or from animal to animal, directly or indirectly. The channel of communication may not always be evident. The most common media, however, are the air, water, milk, food, clothing, and the fluids or tissues of the sick. Sometimes a third person, who may himself escape, may convey disease from one person to another.

These facts imply that an infectious disease must be dependent upon some definite and unvarying agency that is capable of generating the specific disease and no other, and that it is most likely capable of perpetuation and propagation; and also that the existence of any one instance of the given disease bespeaks the occurrence of preëxisting cases. The degree of infectiousness, the virulence, the intensity, the activity of the causative agency, on the one hand, and the attitude of the exposed individual, his receptivity or his resistance, the suitableness or unsuitableness of the soil, the directness or indirectness of the transmission, on the other hand, are different and distinct, though not unimportant, matters. It thus comes about that certain diseases are intensely infectious, mere exposure in the presence of the sick sufficing for their transmission, *e. g.*, typhus, smallpox, yellow-fever; in other instances, the source of infection is found to reside in some definite exhalation or excretion, as, for instance, in the squamæ of scarlatina or the membrane of diphtheria; in still other instances, this source resides in the intestinal evacuations, as in enteric fever, in cholera, in amebic dysentery; or the infectious matter is contained in the sputum, as in pulmonary tuberculosis, in pneumonia; finally, in some diseases, of which syphilis and leprosy are types, it is essential that, under ordinary conditions, the contact between the sick and the well must be direct and immediate in order that infection may take place. It is likely that both leprosy and syphilis are not inoculable upon the unbroken surface of the body, and it is possible that even when wounds or abrasions exist inoculation may not take place, in virtue of the power of the individual organism to throw off the noxious agent, in the same way that all persons exposed, for instance, to the infection of scarlatina do not become scarlatinous, and all who drink water contaminated with discharges from cases of enteric fever or cholera do not develop enteric fever or cholera.

Now we think it will be conceded that all of the diseases that we have named are infectious, *i. e.*, capable of transmission—diseases whose causes are susceptible of perpetuation and propagation. The distinction, however, of calling some of these—for instance, smallpox, scarlatina, diphtheria, typhus—contagious because the transmissibility is the greater and the more subtle, and to exclude from this category others—for instance, tuberculosis, leprosy, syphilis—whose channels of communication are more obvious, though less direct, would seem to be purely arbitrary, to say the least. Contagious diseases are necessarily infectious, and conversely infectious diseases are contagious, though in varying degree. Thus all essential distinction between contagious and infectious falls, and if the term "contagious" is at all to be retained, it should be with the knowledge that it applies but to a form of infection.

With this conception of the two words, which we

think the present state of knowledge justifies, there is little difficulty in harmonizing the views of those who take opposite sides in the discussion as to the contagiousness or non-contagiousness of such diseases as tuberculosis and leprosy in particular. Surely the time has passed when any will seriously question the infectiousness of both of these diseases. The general consensus of opinion the world over is that each is etiologically dependent upon a specific microörganism (though, of course, it is not pretended that the microörganism is the sole etiologic factor); but even the scattering remnant that may have any doubts upon this point will hardly deny the communicability of the diseases. The question of heredity is to-day believed to play a much less important part in the development of tuberculosis and leprosy than was formerly believed. It is probable that any influence that heredity exerts is by virtue of the transmission of cytologic, formative, and developmental peculiarities, or better, tendencies, which make the individual unduly susceptible, so that he falls an easy prey to disease. Cases of congenital tuberculosis or leprosy are rare, and not above suspicion.

Investigation has shown that there are certain foci from which leprosy spreads by the more or less intimate contact of the unaffected with the sick; and experience has also taught that when segregation has been practised, either voluntarily or compulsorily, leprosy has diminished. The disease is most common and shows a tendency to increase only among those whose habits of life necessitate the sleeping together, the eating from the same dishes, the use of the same utensils, the wearing of the same clothing on the part of both sick and well. In the case of tuberculosis it is granted that the hygienic surroundings have a most important influence in predisposing to the disease; but this influence is much slighter, though not entirely without weight, in the etiology of leprosy. Nor, as has been thought, has the character of the food, and particularly the use of fish or the absence of salt, aught to do with the development of leprosy, or the geologic or geographic or climatic conditions, as the recent report of the Indian Leprosy Commission goes to show. In so far as poverty implies overcrowding and bad habits, and carelessness and lack of cleanliness in all relations, in so far does poverty play a part in the causation of leprosy. It is not impossible that leprosy, like syphilis, may be transmitted by means of the use of humanized lymph from infected persons in the practice of vaccination.

There may be some doubt as to the practicability of isolation in the management of cases of tuberculosis, but there can be no such doubt in the case of leprosy, and actual experience has demonstrated the wisdom of this mode of procedure. We would go so far, however, as to say that it would be wise to pursue a parallel line of action in the management of tuberculosis, to the extent of providing institutions in which those could be suitably cared for who were either unable to properly care for themselves, or by choice sought the advantages of isolation and such treatment as can only be carried out in specially equipped institutions. In this instance the segregation would have to be volitional; in the case of leprosy it should be compulsory. As, in the case of tuberculosis of the lungs, the sputum constitutes the most common medium of transmission, particular attention should be directed to its sterilization on the one hand, and to prevention of its dissemination on the other hand. Finally, it seems hardly necessary to add that marriage among the tuberculous and leprous should not be sanctioned.

THE MENOPAUSE OR PRESBYOPIA?

ONE of the most frequent illustrations of false logic comes from the superstition among the laity that in a woman's life the years of the menopause are peculiarly and remarkably distressful years. The noteworthy article of DR. GOODELL reproduced in THE MEDICAL NEWS of January 6th illustrates the profound responsibility that rests upon the profession in reference to the mistaking as genital in origin many phenomena due to other causes. It is doubtless true that the popular belief in all sorts of woes coming upon woman from the age of forty to fifty, as a result of the "change in life," is in great part due to the easy acquiescence of the physician in the somewhat morbid popular logic. In olden times it was, generally speaking, a happy way to avoid both responsibility and the search for real causes of sin, by charging it to the devil, and likewise the physiologic evil of women has been all too readily charged to the mysterious uterus. Every physician knows the perfectly self-satisfied air with which ladies explain all the ills, real or imagined, that occur within five years before or after the menopause, as most certainly due to this mere negation of function. They are quite indig-

nant if a doubt is hazarded about the matter, and not infrequently the doubt is held to be proof positive to the reckless diagnostician that the doubter is a very poor sort of a doctor indeed who is not fully alive to the self-evident truth.

But there are lots of other things that occur in the organism of woman at about the age of forty-five, besides the cessation of certain genital functions. Let us look at one of them—presbyopia. If astigmatism, anisometropia, or hyperopia have preëxisted, the beginning of presbyopic troubles occurs earlier than in the emmetropic, and the reflex phenomena are more marked, proceeding even to the production of violent suffering. The earliness of oncoming of presbyopic reflexes, and the degree of their intensity is in direct proportion to the refractive error. The more likely these errors are to produce pathologic reflexes, the more certain are they to produce them to a marked extent about the age of forty. Every oculist has had daily experience of these facts, and he further knows how speedily the reflexes disappear when proper ametropic and presbyopic correction has been provided.

It is, therefore, a natural but none the less a reprehensible error, lay or medical, that headache, dizziness, and the thousandfold manifestations of ocular reflexes should be mistaken for menopausal reflexes. And it is especially significant—this further fact, known to every oculist—that with the presbyopia uncorrected, the struggle against the presbyopic paresis often continues with much suffering until finally years or glasses bring relief.

Now whether the relief comes from established or completed presbyopia and the resultant cessation of reflexes, or whether it comes from glasses, an easy and lame logic is most likely to jump to the conclusion that at last the organism has conquered the huge difficulty of menstrual cessation. One wonders how the simple cessation of a function of an organ that, as it were, is only semi-attached to the organism, a function that comes on at maturity and ceases when life is about half over—a function that one might call parasitic—one wonders, we say, how it is that its simple stopping could ever have been credited with such a deal of mischief. In man a far stronger function, one that in a sense begins earlier and certainly lasts much longer, ends as unnoticed and uneventfully as can be.

It is not to be understood that we would deny all abnormal phenomena as due directly to the menopause. The "hot and cold flushes," etc., and in rarer cases the most pronounced examples of painful reflexes, may occur. We protest only against the wholesale ascription of the abnormal phenomena that occur at and about this period of life to the menopause, and urge that thousands of errors of diagnosis and so of treatment (or failure of treatment) have been due to the error of logic described. At this time of life—and although true of men this is especially true of women—the oncoming of presbyopia is often intensified by preëxisting ametropia, and produces reflexes, astonishingly various in nature and location, that are wrongfully ascribed to the genital disorder. It therefore behooves the physician to be on his guard against this mistake, and to consider if his patients suffering from such symptoms may not find comfort with relief of the ocular strain. The disinclination of the lay mind, and sadly often of the professional mind, to see or to acknowledge the frequency and severity of the reflex symptoms due to eye-strain, coöperates with the false logic of which we have spoken, and hence a large number of women go on suffering for years, the mistaken diagnosis even proceeding to operations on the genital organs. We wished in this writing to simply add a supplement to the altogether admirable article of Dr. Goodell concerning the *great medical error of the day*, the purport of which is that the specific source of many of the general nervous or extra-genitally located symptoms that are so commonly and so mistakenly ascribed to a genital origin, do in fact lie in the eye, and at or about the age of forty are especially due to presbyopia.

EDITORIAL COMMENTS.

Minority Rule in a Democratic Form of Government.—Concerning the defeat of the attempt to secure the enactment of a bill for establishing a Medical Examining Board in the State of Georgia, the following noteworthy comments and admissions are made by the *Medical Century* (Homeopathic):

"*It is a fact that the Homeopathic profession is opposed to the examining board plan of control. It is the plan that has crushed us out of existence almost, in Germany and several other foreign governments, and it is the plan that retards our growth and development in Europe, in Canada, and in those States of the Union as have thus far adopted it.* Yet we find here and there a willingness on the part of our forces to accept the measure, largely on the grounds that it cannot be avoided, and that we had better, therefore, accept our part of it, no matter how little or how much that may be. *In New York, Maryland, and one or two other States, we have contended for separate boards, and have won*

them, with the result that our interests have been shown to have suffered the same, almost, as though but a single board had existed. In Minnesota, and one or two other States, our colleges have allowed themselves to be entrapped into consenting to a minority representation, with the result that they are about as well off as in those States having three boards, all being in much worse condition in so far as growth in numbers and other developings are concerned than in most States having no boards, but good registration laws instead. And it is a fact that in every State having a board law a good minority of our school, if, indeed, not a good majority, have yielded their convictions against the board plan of control to the thought that boards it must be, and, therefore, we had better get what we can out of it.

"The victory in Georgia shows that this is sheer weakness. Dr. Orme and a few colleagues, together with such opposition as could be brought to bear from the eclectic school, has been able to defeat a bill in a State in which Allopathy is unusually strong, and Homeopathy unusually weak. Likewise the homeopaths of Louisiana have recently defeated a similar measure in their State, whereas they number less than a score and a half against over 1500 allopaths. And in Texas our forces, numbering less than a hundred, have defeated the old school three different times, the latter numbering above 4000 strong.

"These victories in the Southern States, where homeopathy is in almost a hopeless minority, while the old school is securely intrenched with all the prestige of numbers, political preferment and position, and financial and social standing in high degree, should teach us a lesson of courage and determination not to allow the older sect to rule in this matter. It has proclaimed from the house-tops that by the examining board plan of control it will crush out all opposition to 'regular' medicine, and it at once becomes our duty, and should become our pleasure, to oppose to the death all medical legislation looking to the formation of examining boards, no matter how constituted."

It therefore appears that neither the homeopaths nor physicians desire the ignoble compromise distasteful to both, but accepted by both, because neither can have what it wishes. This reminds us of the story of the rich man and his wife, who quarrelled for years about the disposal of their fortune, each wishing to will it to a favorite heir. They finally compromised by leaving it to a distant relative heartily detested by both.

What an amount of pusillanimity and pigheadedness about this whole affair! Why do the scientific physicians of the country not demand that the first principle of all civilized government, rule of the majority, shall obtain in medical legislation? Why, in the name of common sense and decency, all this disgraceful dodging and dickering?

The Etiology of Gastric Ulcer.—Many causes have been assigned for the production of ulcer of the stomach, but no one is sufficient to explain the occurrence in all cases. It is, however, pretty generally agreed that the predisposing condition is some impairment of the vitality of the cellular structures, whether as a result of preceding inflammation, of traumatism, of chemic influences from without, of interference with the circulation, of the presence of infectious or toxic elements in the blood, of the breaking down of neoplasms, or perhaps of some nervous influence, and that the exciting influence consists in an altered relation between the alkalinity of the blood and the acidity of the gastric juice. It is well known that the condition is most common in anemic young women. It may occur in the course of other forms of profound deterioration of blood, such as scurvy and purpura. It often develops in the course of carcinoma of the stomach, and has been observed in the sequence of enteric fever. Some investigators have found streptococci in thrombi that have formed in the gastric veins in cases of puerperal infection. Gastric ulceration has also been induced experimentally by the intravascular injection of pus, by the intra-peritoneal injection of staphylococci, and by the intra-gastric and intra-peritoneal injection of bacilli found in some cases of dysentery.

An interesting contribution to this subject is made by two French observers, Enriquez and Hallion (*La Semaine Médicale*, No. 73, 1893, p. 579) in a paper presented at a recent meeting of the Société de Biologie, of Paris, who reported that in a series of observations they had found that subcutaneous injections of the toxin of diphtheria in guinea-pigs and dogs were followed by ulceration of the stomach. Two dogs thus treated presented symptoms of gastro-intestinal catarrh, with bloody stools, dying after the lapse of eight and fourteen days, respectively. Upon post-mortem examination gastric and intestinal ecchymoses were found in one case, and ecchymoses and ulceration of the stomach in the other. Eight guinea-pigs lived for periods varying from two to fifteen days after the injection, and upon post-mortem examination lesions of the stomach were found in seven of the animals. The morbid changes were seated almost exclusively in the pyloric region, and upon the lesser curvature. They consisted in multiple ulcerations, some small and irregularly rounded; others larger and more irregular in outline. Besides these areas of ulceration there were present grayish sphacelated patches that were easily detached. On histologic examination the sphacelated areas were found to be limited to the thickness of the mucous membrane. The deeper layers of the mucosa were congested and infiltrated with round cells. Similar changes were also found in the structures adjacent to the ulcerated areas. In these situations the submucosa was thickened, and displayed manifest endarteritis. The changes in the mucous membrane corresponded accurately to those in the submucosa, and especially to the distribution of the vascular lesion. It seems difficult to escape the inference that in the experiments detailed a relation existed between the toxic injections and the occurrence of the arteritis, with the development of ulceration in the area supplied by the affected vessels; and likewise the analogy between the ulceration thus artificially induced and the condition as it is encountered in man.

Should Physicians Charge Each Other for Medical Services?—In view of the almost universal custom of physicians, as well as of the tradition of the profession, the question would seem to be almost insulting. Nevertheless there are a number of physicians who would answer the question affirmatively, and others who would not say No with quite the emphasis to be expected. The question was lately asked of a prominent and highly respected physician, and his answer was that, while no honorable

physician, without demand, would name a charge or send a bill to a brother physician, it is growing more and more customary for the recipient of the service to demand the bill. There is, perhaps, something to be said upon this side of the question. In default of a money-payment, the grateful patient will naturally make his physician some gift, but he finds it difficult to select a suitable present; it makes him, apparently, a useless trouble, and he keeps thinking that his physician might as well take the money and spend it more to his own liking. In obstetric cases, in prolonged illness, or other work wearying, or expensive, whether to life or pocketbook, certainly no physician would permit his benefactor to go without some more substantial reward than the most sincere gratitude. The result of the tendency to put the service on a financial basis would, however, lead easily to abuse, and would likely soon destroy that largeness and lovableness of spirit, that mutual helpfulness and *esprit de corps* that has been one of the most delightful and enheartening characteristics of the medical guild. Such a cloud over the medical landscape would give it a very different tone from what it has heretofore shown, and, we are happy to say, which it still exhibits. Nothing so robs a man of respect, nothing sooner surrounds him with an atmosphere of concealed contempt, nothing more speedily deprives him of professional skill or usefulness, than the basing of every act on the hidden thought of "How much money can I get out of it?" A surgeon once performed an operation on a physician's wife, and took occasion during convalescence to ridicule the offering of a small gratuity sent him for a similar service by another physician, as well as otherwise hinting the money-value of his work, and this despite the history of many "reference-cases" from the lady's husband to the surgeon. However large the fee gotten by such means, it was, as we all know, stupidly poor policy and worse principle. The very air about such a man shrinks from him.

Medical Advice at the Rate of Two per Cent. a Ton!—A prominent physician of one of our Southern seaports writes us of a deplorable custom existing there, and it is one we doubt not that is becoming common at other ports. Printed notices or engraved cards are distributed by competing physicians to the captains of incoming vessels, setting forth the doctor's own fitness and scientific abilities, and soliciting the patronage of the crew while the vessel remains in port. The rates are "2 per cent. a ton." That is, for a vessel of 1500 tons, the entire crew may have the unexcelled services of this unexcelled therapeutist and surgeon for $30 until the ship again departs. It matters not whether the stay in port is one week or one year, and whether one man or twenty are sick or wounded. The business is strictly wholesale.

But these are the days of great undertakings, of syndicates, of the systematic marketing of virtue, of quotations by the "ticker" upon medical honor, nostrum-puffs, and professional skill. Hence we may doubtless look for a proper extension of the plan by some enterprising company-former, or "promoter," who shall concoct a syndicate and be able to offer wonderfully low rates to all vessels and for all the seaports of the United States, the contracts to extend for a year, or ten years, or perhaps for eternity, "at the option of the party of the second part."

Ethical Advance.—It is with more than ordinary gratification that we note the following announcement in the January number of the *Canadian Practitioner*, one of the most prepossessing monthlies that come to our hands: "We have much pleasure in announcing that in the future our eighty pages of ordinary reading matter will not be marred by the presence of 'inserts' or fly-leaves of any description pertaining to advertisements, nor will they contain what are called reading notices of articles advertised. Our advertisements will appear in the place allotted to them, and none of an objectionable character will be allowed to appear."

An Anatomist's Anomaly Blank, designed for the use of dissectors in recording any noteworthy anomaly that may be found, is a praiseworthy device of Dr. A. Hewson, of Philadelphia. The sheet has proper spaces for the student's name, the principal normal physical characteristics of the subject, and for anomalies of each of the principal organs or classes of tissues, in proper order and sequence. The proper recording of the anatomic peculiarities occurring in the thousands of dissections made in the country would eventually result in interesting and valuable scientific lessons.

A Physician Can Testify as to the Effect of Wounds Merely Described to Him.—When other witnesses have furnished descriptions, say of wounds, the Supreme Court of Georgia holds, in Von Pollnitz *vs.* State, that a practising physician is a competent witness to form and express an opinion, as an expert, touching the probable effect of such wounds. Under such circumstances the examination should be conducted on a hypothetic rather than on the actual case. No objection being raised to the latter course at the time, it will be sustained.

SOCIETY PROCEEDINGS.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Special Meeting, held January 12, 1894,

THE PRESIDENT, S. WEIR MITCHELL, IN THE CHAIR,

To consider the Proposed Action of the Board of Health in Reference to the Registration of Tuberculosis.

THE Council, to which the resolution and amendment with reference to the proposed action of the Board of Health concerning tuberculosis were referred, offered the following resolution to the College:

Resolved, That the College of Physicians believes that the attempt to register consumptives and to treat them as the subjects of contagious disease would be adding hardship to the lives of these unfortunates, stamping them as the outcasts of society. In view of the chronic character of the malady, it could not lead to any measures of real value not otherwise attainable.

That strict attention on the part of physicians in charge of the individual cases, insisting on the disinfection of the sputum and of the rooms, on adequate ventilation, and on the separation of the sick from the well

as far as possible, will meet the requirements of the situation so far as they practically can be met, and better than any rules that, for diseases so chronic, can be carried out by a Board of Health.

That the College of Physicians respectfully requests that no official action be taken in the matter by the Board of Health, except the insisting on disinfection of rooms in which consumptives have lived and died in instances in which such procedure is not likely to have been adopted under the direction of the attending physician.

DR. OWEN J. WISTER: When I offered my resolution at the December meeting of the College it was objected by those who are in favor of registration of cases of consumption that nothing was intended beyond registration in order that medical literature of a kind to warn persons of danger might be sent to their houses. In a paper read before the Pan-American Medical Congress on "Tuberculosis," and published in THE MEDICAL NEWS of October 21, 1893, there is a good deal more in reserve which is insisted upon.

Registration, in the first place, is meant to include the residences of all persons affected with pulmonary tuberculosis, and even if the place of residence is temporarily changed it must be by and with the consent and knowledge of the Board of Health.

As to the literature, so called, I think that is of doubtful desirability. Those who spent the summer of 1892 in town, when there was a cholera-scare, will remember that there was a great deal of this sort of literature—the papers reeked with it. The evening papers published articles of such a sensational character that the Health Officer was lashed into such a state of hysterics as to propose a quarantine against New York, under the act of Legislature which makes such a proceeding lawful when a contagious disease is "raging in a neighboring city." The "rage" in this case amounted to four cases in a month in a population of a million. This proposition, however, was not adopted. But while the Board of Health was thrown into spasms of terror, there was enough that was ludicrous in this literature to throw the community into spasms of laughter, and we had a rather cheerful summer. It cannot be hoped that this view will always be taken when, instead of a scare of two or three weeks, it will last ten or fifteen years, while from forty to fifty are dying a week. It is then possible that this literature may lash the whole community into panic, and that instead of regarding the unfortunate victims of consumption as objects of compassion they will be looked upon as fountains of peripatetic danger, and a feeling of hostility to them will arise. This may last for years, for during the whole period of softening they are regarded as sources of danger. In fact, they are to be treated as criminals guilty of consumption. As I said before, their residences, however temporary, are to be disinfected, and their miserable lives are to be rendered more wretched by being haunted by the familiars of the inquisition. It is asserted that if these radical measures are carried out tuberculosis will be eradicated in a few years; of that, it is said, there is no doubt. Now, no other contagious disease has ever been extinguished, even with the added protection of vaccination in smallpox. Those of us who are not in the intimate confidence of Nature find it difficult to understand how an hereditary disease can be eradicated by measures which only limit its spread by contagion; and if it is not hereditary, whence come those forms of tuberculosis other than pulmonary? It cannot be pretended that babies, a year or two old, get tuberculous meningitis by contagion; nor can white swelling, or suppurating glands, or the many other exhibitions of scrofula come from contagion. I think very few of us will concur in this sanguine expectation. There are several other suggestions—one is likely to be very popular: it is that all persons working in factories and the like who are affected with pulmonary tuberculosis, in the softening stage, shall be withdrawn and, when necessary, supported by pensions. In this country we have had a large experience of pensions; pensions have bankrupted the treasury of the United States. It is easy to believe that people unwilling to work could get the necessary certificate from some twopenny doctor and be supported by the State. As to the more serious part of the matter, the treating of persons so unfortunate as to have pulmonary tuberculosis as criminals guilty of consumption is something so frightful that I implore the College to interpose its remonstrance against such an outrage on common sense and common humanity.

DR. L. F. FLICK: Together with other Fellows, I would like to bring up the entire subject for discussion, and without wishing to find fault with Council in referring back the resolution in amended form, I should like to offer a substitute, which will bring up both registration and special hospitals for the treatment of the consumptive poor. The substitute is as follows:

Whereas, Tuberculosis is now known to be a contagious disease; and

Whereas, The methods by which the disease is conveyed from the sick to the well are now clearly understood; and

Whereas, It has been shown that the room which is occupied by a consumptive during the infectious period of the disease, and the furniture and the bedclothing which have been used by him, become infected and are liable to convey the disease to others who may occupy or use them subsequently; and

Whereas, Tuberculosis, owing to its long duration, cripples the bread-earning capacity of the family, when it occurs among the poor, to such an extent that the want and hardships which follow in its wake prepare the healthy members of the family for the disease; therefore be it

Resolved, That we recommend to the Board of Health of the City of Philadelphia the registration and disinfection of houses which have been infected by tuberculosis;

Resolved, That we recommend to the City Councils of the City of Philadelphia the establishment of a Municipal Hospital for the treatment of persons suffering from tuberculosis.

The question of contagion seems to be admitted, and can, therefore, be eliminated from the discussion. I will then take up the question of prevention.

In reply to what has been said by Dr. Wister, I may state that the paper from which he quoted was a scientific paper covering the entire subject. He ought to have told you that the author pleads in that paper only for a beginning in preventive measures.

The contagion of tuberculosis being admitted, what measures are necessary for its prevention? The careful investigation of this subject from many points of view by Dr. Cornet, Dr. DeForest, and myself, show beyond doubt that there is a local infection—that the consumptive in his home is bound in his ordinary daily life to infect his room, the furniture, and the bedclothing. The experiments made by Cornet illustrating this subject are most elaborate. They covered a period of two years, during which time he perseveringly followed out his line of research. He examined the dust gathered from the floor, the walls of the room, the bedposts, and the bedclothing of persons in advanced stages of consumption confined to their beds. He found by inoculation with this dust that he was able to produce tuberculosis. He found, moreover, that when a patient was sufficiently intelligent and obedient to follow the instructions to always spit in the sputum-cup and never into a handkerchief or on the floor, inoculation with the dust produced no effect; but when the patient occasionally spat into a handkerchief, or into a nook in the room, inoculation with dust from the surroundings of these places was effective. He was able to demonstrate that in proportion to the obedience and cleanliness of the patient the extent of the infected environment decreased. When the patient was cleanly and took ordinary precautions, but not absolute precautions, the infection extended to only a limited space, possibly four or five feet. When the patient was uncleanly and spat indiscriminately, not only the bedposts and the floor, but also the walls, were capable of conveying the infection. The clinical investigations which I made in this city, and the clinical investigations made by Dr. DeForest in New Haven, corroborate these results in such a way that their meaning cannot be misunderstood.

The evidence of infection and retained infection of houses, together with the demonstrations made by Cornet, can point to only one conclusion, and that is that the houses which have been inhabited by a consumptive for a given period will retain the infection and convey it to others. I have investigated quite a number of cases which illustrate the same point. I have knowledge of a telegraph office in Maryland in which five consecutive operators contracted tuberculosis and died. The results in these five cases were so striking that people became superstitious in regard to the office. I have been informed by a person who saw the office that the consumptives spat around the office and that it was lined with tuberculous sputa. I have been able in this city to trace a great many cases in which persons innocently moved into houses, unsuspicious of any infection and in which within six months a member of the family who was healthy before has taken the disease, and this case has been followed by others.

Dr. DeForest mentions a very striking result of his investigations in New Haven. He investigated the histories of 100 cases coming to the medical clinic of the city and found that 52 were living in infected houses. In 1888 I carefully examined the deaths that occurred in the Fifth Ward during that year. There were 83 *bona fide* deaths from consumption. Although out of the 3500 houses only 650 were infected; two-thirds of these cases occurred in these infected houses. Of the remaining third a large number had lived in infected houses and had changed their residences, so that apparently more than two-thirds of the cases in which death occurred in 1888 had contracted the disease while living in infected houses.

If the facts I have related are true, how is it possible to institute any practical preventive measures without registration? The education that is spoken of in the resolutions offered by Council will not accomplish much. Cornet has shown that even when the patient has carried out most of the instructions the immediate surroundings are infected. As you are well aware, among the very poor there is no nursing. The consumptive is apt to lie on a bench in the kitchen—a small room, perhaps eight by twelve feet. He has to wait on himself and probably spits all over. Under such circumstances he is bound to infect the room, and it has been shown that the disinfection of such a room does not consist in burning sulfur, but special methods are required. One of the most efficient methods is rubbing down the walls with dry bread and then washing with carbolic acid or some other powerful germicide. The furniture and the bedding also require disinfection. You well know that the houses in which the poor live are owned by men who try to get as much money as possible out of them. The owners will not disinfect these houses if they can avoid it. It is only by the authority of the government that this disinfection can be accomplished.

Now, is the profession ready to step forward and say: "We will make an earnest effort to stamp out tuberculosis?" The profession throughout the country has said that it will. The American Public Health Association, during its session in Chicago, adopted resolutions asking that registration should be practised. The Section on Hygiene of the Pan-American Medical Congress adopted similar resolutions. The Congress of Tuberculosis, in Paris, in 1888, passed resolutions asking that tuberculosis be recognized as a contagious disease, and in 1891 passed a resolution asking that disinfection be practised.

Will disinfection have any effect? It will. I should like to cite one illustration: As far as I know, Berlin is the only city that has taken scientific precautions against tuberculosis. The result is most encouraging. In the city of Berlin there has been a marked reduction in tuberculosis from 1884 to 1891, the most rapid reduction of any city of which I can obtain statistics. In Philadelphia there has been a reduction. In London there has been a vast reduction since the establishment of consumptive hospitals fifty years ago. In Berlin there has been the most rapid reduction; from 1884 to 1891 there has been a reduction of 0.644 per 1000. In 1884 the mortality in Berlin was 3.455 per 1000 and in 1891 2.811 per 1000. In Philadelphia, where we have been priding ourselves on the reduction, there has been in ten years only a reduction of 0.623 per 1000. Whether or not registration is being enforced in Berlin I do not know. I have been told by private parties that it is. Contrasting the reduction in Berlin with the reports from other cities, we find that the mortality in Paris was about the same in 1890 as thirty years before—4.574 per 1000.

Whether or not France will succeed in establishing preventive measures is yet to be known. I have had no definite information on the subject.

As to the sentiment on this question, it is all on the side of registration. I grant that it may be hard for wealthy people to be recorded as suffering from tuberculosis, but this is a disease of the poor; the vast majority of consumptives are very poor, and the necessities of the poor so demand registration that they should outweigh the sensitiveness of the rich. But the sensitiveness of anyone can be overcome by the suggestion embodied in the resolution I offered, a suggestion which was made to me by Dr. James C. Wilson—that is, instead of registering the individual to register the infected house. It would then not be necessary to register tuberculosis among the wealthy, as only houses that had been infected would have to be registered. When infection can be prevented by proper sanitary measures there would be no occasion for registration. This would enable us to register those houses that need to be disinfected.

The best place to study this subject is among the poor. It is there that I have learned my lessons. I am satisfied that every man here will reach my conclusions if he will go among the very poor and study this question at the bedside, and see how, one by one, these people die from the disease because they are unable to protect themselves and because in the endeavor to protect and supply medicine to the stricken one the healthy fall victims to the disease. It is these that need aid. The College of Physicians should now take a firm stand and do something in aid of these people. It is not necessary to do everything at once. Let us make a beginning. Experiments have been made; let us now come to action. It is not fair to the public that the medical profession, with the knowledge it possesses, should do nothing. The laity cannot act because it has not the knowledge. If we who have the knowledge do nothing we are certainly responsible for the deaths of those who otherwise might be saved.

DR. J. M. DA COSTA: Let me say in the first place, that I thoroughly admire the enthusiasm which Dr. Flick has for years brought to the study of this question. I think that the way in which he has gone about this work is in every respect most commendable, and in its spirit and scope this is one of the best series of observations with which I am acquainted. If I differ with him it is rather in the conclusions than with reference to his mode of investigation and his aims.

When we speak of contagion in consumption, we cannot mean that it is markedly contagious. There is no proof that it is. It is not contagious like typhus fever, or smallpox, or scarlet fever, or diphtheria. It is only slightly contagious. It is, indeed, so slightly contagious that some of our best thinkers, with the largest fields of observation, notwithstanding the evidence that has been adduced, still hold that it is not contagious at all. For instance, if we take the opinion of a man so long connected with the Brompton Hospital as Dr. Williams, we find in the last edition of his work on *Pulmonary Consumption*, that he maintains that no more deaths from consumption occurred in the attendants of the Brompton Hospital than occurred among the same number in ordinary life. The evidence of Dr. Andrew, of the Victoria Park Hospital, is in the same direction. When we look at the conclusions of these men and at those of Wilson Fox and many others, it is going too far to assume that the whole profession admits the disease to be contagious.

That it is moderately so, and that it can be communicated under exceptional circumstances, I firmly believe; but that we should regard it as a very contagious disease and take all the precautions that we do in such diseases, I deny. If it be contagious, it is contagious, as everyone admits, chiefly through the sputum. Is it to be understood that an inspector from the Board of Health is to come daily to take care of the sputum-cup? Is not the intelligent physician the proper health-officer? Is not what he says sufficient, and can he not advise and enforce the destruction or the disinfection of the sputum as well as any public officer? Finding bacilli in the bedclothes and on the bedstead, and destroying them, will not eradicate consumption. Tubercle-bacilli are widely diffused. They are in the dust of the air we breathe, blown about from the dried sputum of consumptives in the street. They have been demonstrated to exist on the fruit sold in our markets; they are in milk. They may, indeed, be said to be everywhere; and not only in the homes of consumptives. They have been found in churches, in places of amusement. Where will you draw the line as to watching and interfering with the life of the consumptive? Must we not take the broader view, and act on the degree of the communicability, and how far it is practicable to control it, rather than on the mere abstract question whether tuberculosis be contagious or not? The degree, every observer knows, is extremely slight.

The excellent series of observations about the houses is, I believe, subject to several fallacies. In the first place, unless you know the history of the persons themselves, these observations on the houses supposed to be infected are not conclusive. You must know whether or not the individual inherited tuberculosis. I am one of those who believe that the disease is largely hereditary. Of what use is it to say how many living in these houses die of consumption unless you know the history as well as the number of those who have occupied them?

Again, we should bear in mind when discussing the contagiousness of phthisis, how enormously prevalent the disease is, and how difficult it is to draw conclusions when you have the most prevalent chronic disease to deal with. As bearing upon the question of infection from husband to wife, it has been calculated by Longstaff as a mere matter of statistics without reference to the question of contagion, that of every 148,121 men who die of consumption in the ages of married life, there would be 4358 wives who would have consumption—that is, about 1 in 33. Thus, for every thirty-three married men who die of consumption there would be one woman who would have it, as a mere matter of ordinary frequency, whether the disease be contagious or not, and the probability would be a little more for phthisical wives. The number of cases seen in which both husband and wife have been affected is comparatively small. Flint, in over six hundred and seventy cases, noted but five such instances. My record shows more such instances, including one in which a tuberculous husband had three tuberculous wives. Still I have not met with very many, and the chances are always slight that the husband communicates the disease to the wife,

or the wife to the husband. When we take all these facts into account, as well as the strong hereditary tendency of the malady, we must be careful how we draw conclusions in individual instances of apparent contagion.

Mindful of the observations of Dr. Flick, I have for some time questioned myself with reference to houses that I have known for years in which there has been consumption. But I have not taken them in one district, but everywhere. And this seems to me a much fairer way of studying the question, as the indiscriminate selection obviates the likelihood of error from bad hygienic conditions, especially of drainage, that houses near each other might share.

I have many houses in mind in which no case of consumption followed the first. In one the father died of slow consumption twenty years ago. The mother is, as regards tubercle, perfectly healthy to this day. The seven children have grown up into exceptionally healthy young men and women. In another house the wife died of consumption about eighteen years ago. The husband continued to live in the same house, and a family of children have grown up healthy. Another house has been occupied for many years by a consumptive who has had the disease for twenty-five years. Neither his wife nor any of the five children has become affected, though he is in the hands of a physician who does not believe in the contagiousness of the disease, and does not direct the sputum to be disinfected. Another house was occupied for years by a consumptive mother, whose husband had died of the disease many years before in another city. The son and daughter remained in the house mentioned for eight years in perfect health. It has since been occupied by a lady whose history I know, who is also healthy. The son got married about seven years ago, and has lived in various places. Within the last two years he has become a consumptive. His strong hereditary tendency determined the occurrence. I could go on citing instance after instance. I admit they furnish negative evidence. But negative evidence in a matter of this kind is valuable. I am on the whole quite certain that in by far the larger number of cases in which I have known the history of both the house and of the household for a long time, there could not even be any suspicion of house-infection. It is true also that in most of the houses cleanliness and ventilation were well attended to.

Further, in the question of house-infection, we must not overlook the fact that these supposed centers of infection may adjoin, and have common drainage. And, under any circumstances, does it not suggest that possibly there is something wrong in the drainage or subsoil as much as it does infection of the house? The well-known observations of Bowditch and of others have made us familiar with this mode by which consumption spreads in Massachusetts and in the whole of New England.

With reference to hospitals: Consumptive hospitals have been brought forward as a strong evidence of the non-contagiousness of phthisis, though I cannot say that the figures adduced are to me absolutely convincing, and there may be something in the greater prevalence and concentration of the poison that make consumptive hospitals more likely to be sources of infection. I have already referred to the observations and opinions of Dr. Williams and of Dr. Andrew. But as regards general hospitals in which consumptives reside, they certainly cannot be shown to be places of infection. I will quote the remarkable results in the General Hospital of Vienna. That hospital is one of the largest in the world. It is full of consumption, and there were, as we know by some observations made long since, and before the disinfection of the sputum was attended to, in three years 2736 deaths from phthisis, and not a medical officer or a nurse had become infected. I will refer to the record of the Pennsylvania Hospital, which always has consumptives in its wards. I have taken some pains to ascertain the truth in this matter. In my long connection with the institution there never has been a time when there were not cases of tuberculosis in the medical wards, and there have also been cases of surgical tuberculosis in the surgical wards. Of 147 resident physicians that have been in the hospital in the last seventy years, and of whom I have traced the medical history, and many of whom I have personally known and examined, but one has died of tuberculous disease. Two others have at different times shown tuberculous symptoms. One of these is now living in Arizona in fair health. In the other even bacilli have disappeared from the sputa. The one dying did not die for more than five years after leaving the hospital. Moreover, before becoming a resident physician, he was in delicate health, so that it is not fair to attribute his death to his having lived in the hospital.

A stronger statement still can be made with reference to the nurses. Of forty male nurses that have been in the hospital in the last twenty five years, but one has shown any sign of tuberculous disease. He is now a patient in the hospital. He did not become tuberculous until four years after leaving. There have been 163 female nurses whose histories can be fairly well traced. Of 53 that have left the hospital in the last five years we know the present condition accurately. Not a single one of these certainly has had any tuberculous symptoms, notwithstanding that there was always tuberculosis in the wards, always some exposure, and until recent years disinfection of the sputum was not practised, although ventilation was always attended to. There is only one case even doubtful. This nurse has an occasional cough, and is not strong. Her father and mother both died of consumption.

When we take all these facts into account, granting, as I do, that up to a certain extent tuberculosis is contagious, I think that the recommendation of the Council to the Board of Health is the right one. Why fix the brand of leper on a poor unfortunate because he has consumption, when the medical officer can do all that is necessary? He can instruct how to ventilate and keep the house pure, and how to disinfect the sputa. What more could a Board of Health do? What can it do, except in instances of death in which proper disinfection may not be carried out? When death has occurred, and when disinfection is not likely to be practised, it would be proper for the Board of Health to interfere. Under other circumstances, why should we place a stigma on the consumptive, why have him pursued from house to house, why have him a marked man, why have the house a marked one? Why give it a bad

name and injure the landlord because there has been a death from consumption in it? I think that the resolutions offered by the Council cover the whole case. No human being will suffer. It will only enforce on medical men the necessity to insist on proper disinfection and proper hygiene. It will do as much as possibly can be done, and as much as any Board of Health can do.

With reference to hospitals for the consumptive, there is a great deal to be said on both sides of the question. Undoubtedly larger means of separating the sick from the well are desirable. But whether this can be made in any way obligatory is doubtful; large social questions and questions of finance arise which take the matter far beyond our power materially to influence.

We must not overlook the strong hereditary tendency to the disease. If you want ever to get rid of consumption, it is not going to be simply by the disinfection of sputa and similar means. It will be largely by the prevention of the marriage of tuberculous patients. There you strike at the root of the evil. Until hygiene, preventive medicine, and law have reached that point, I think that we must let this question take care of itself, doing the best we can to limit the ravages of the disease. I admit that it would be most desirable if we could separate the consumptive from the well. If the State were rich enough to form colonies in climates in which consumption will not flourish, that would be a most admirable means.

Let me say that it is not because I do not believe that phthisis is communicable that I oppose the contemplated action of the Board of Health to declare the disease contagious, and to register consumptives, but because I believe that the means proposed will produce hardship without corresponding value, and that they are both unnecessary and insufficient. The Board of Health has already the right, and may well enforce it, to have any house that, whatever the cause, has a bad sanitary record, put in better order. Moreover, it can do much in destroying other sources of infection, such as diseased meat, the milk of tuberculous cows, in improving drainage, in favoring open spaces that air and sunlight may get into houses. But let it leave the care of the individual where it belongs—to the conscientious physician.

DR. JOHN B. ROBERTS: It seems to me that this question is almost exactly the same as the one with which surgeons struggled ten years ago. I was one of the conservative ones who did not at first practise antisepsis, but employed half-way measures, and saw all my cases suppurate. This is the point to which the question of tuberculosis has come.

I think that Dr. Da Costa's statement that there are a large number of cases all over the country, which he uses as evidence that the disease is not certainly infectious, is really an argument on the other side. It is so because there is infection. There are so many hereditary cases because infection of the parents has so weakened the tissues that a lowered resistance is transmitted to the children, and they cannot repel the invasion of the bacilli.

It is said that the doctor can do all that is necessary, but Dr. Da Costa has said that he has known of cases where the physician would not take any precautions. That is a reason that the Board of Health should step in among the poor and see that the houses are clean. We see this in diphtheria. It is not a question of damage to landlords. It would be an advantage if everyone knew that every house was disinfected, either by the willing efforts of the people, or owners, or by the Board of Health. There seems to be no reason why there should not be a report to the Board of Health if it will act in a reasonable manner. There is no expectation that the Board of Health would take the same measures as in typhus or typhoid fever. It is only a few years since typhoid fever was placed on the contagious list. If the matter had been discussed publicly there would no doubt have been many men on both sides—some for, some against putting typhoid fever on the infectious list.

It might be well to mention what has been done in other places. In February, 1892, at a conference of the medical staff of the Manchester (England) Hospital with the medical officers of health and others, it was unanimously resolved that it was desirable that certain cases of phthisis should be notified to the medical officer.

Dr. Hermann G. Biggs, the Chief Inspector of Pathology, Bacteriology, and Disinfection in the Health Department of the City of New York, has sent to the Health Board a long statement regarding the contagiousness of tuberculosis, accompanied by a number of recommendations. He says:

"First. Tuberculosis is a contagious disease and is distinctly preventable.

"Second. It is acquired by the direct transmission of the tubercle-bacilli from the sick to the well, usually by means of the dried and pulverized sputum floating as dust in the air.

"Third. It can be largely prevented by simple and easily applied measures of cleanliness and disinfection."

His recommendations include:

"That there be systematically disseminated among the people by means of circulars, publications, etc., the knowledge that every tubercular person may be a source of actual danger to his associates, and his own chances of recovery diminished, if the discharges from the lungs are not immediately destroyed or rendered harmless.

"That all public institutions, such as asylums, homes, hospitals, dispensaries, etc., be required to transmit to the Board of Health the names and addresses of all persons suffering from pulmonary tuberculosis.

"That all physicians practising their profession in the city be requested to notify this Board of all cases of pulmonary tuberculosis coming under their professional care."

The North London Hospital for Consumption issues directions to its out-patients and to its ward-patients, recognizing the contagious nature of tuberculous phthisis and suggesting precautions.

The Royal National Hospital for Consumption, Ventnor, has this to say:

"Patients are earnestly requested not to spit on the ground, floor, or fire-place, but to expectorate into the proper vessel. When this is not possible, the handkerchief should be used without fail; but in order that the expectoration may not become dry it has been arranged that a clean pocket-handkerchief shall be supplied to each patient daily, the soiled one being at the same time removed for the double purpose of disinfection and

washing. *It is to be distinctly understood that spittoons shall always be used when possible, and that the handkerchief is only supplementary, to prevent spitting upon the ground.*"

The Manchester Hospital for Consumption takes a similar position:

"All matter coughed up from the chest should either be spat in the fire or should be received into a vessel lined in such a way with a piece of paper that the paper and its contents may be lifted out and burnt.

"Rags that can be burnt should be used instead of pocket-handkerchiefs, and if a pocket-handkerchief be used it should be well boiled before the matter upon it has had time to become dry and powdery.

"N. B.—The Medical Officer of Health for Manchester undertakes to purify, *free of cost*, any house that may be notified to him by competent medical men."

Last year the Northwestern Branch of the Society of Medical Officers of Health drew up a memorandum on the subject, which has been pretty widely distributed in the North of England. In this memorandum the infectious nature of consumption is definitely laid down, and dried sputum in the form of dust is indicated as the vehicle of contagion.

The County Borough of Oldham, in England, gives similar "precautions against taking consumption."

The French Ligue Préventive contre la Phthisie Pulmonaire says:

"The most frequent and powerful source of infection lies in the expectoration of consumptive patients. Although almost harmless so long as they remain in the liquid state, the sputa become especially dangerous when they are reduced to dust. They quickly take on this form when they are projected on to the ground, the floor, the walls; when they soil clothing, counterpanes, bedclothing, curtains, etc.; when they are received into handkerchiefs, napkins, etc."

With this evidence of scientific work in other places, can the College of Physicians of Philadelphia deny the contagiousness of phthisis, or doubt the advisability of the Board of Health knowing and registering the houses of at least the poor and careless, in which the germs of tuberculous consumption are threatening the public safety?

While there may be a few who believe in the non-contagiousness of consumption, the vast majority does believe that it is contagious to a certain extent. It is the same old story of antisepsis and sepsis. The College of Physicians should go on record that consumption is contagious more strongly than appears in the report of Council. In the second place, something should be done. That seems to me to be in the direction of letting some official know that the consumption-bacilli are to be found in a certain locality. Not the physician, but some central body should have the authority to know and the authority to enforce such measures as will limit the spread of the disease among the poor. If we limit it among the poor we limit it among the rich.

Dr. William Osler (Baltimore): The question may be thus briefly stated:

First. Following a primary law of parasitism, the bacillus tuberculosis frequents chiefly that organ in its host which communicates most freely with the exterior. Just as countless thousands of ova are thrown off from the intestine of the bearer of a tapeworm, so from tuberculous lungs in a state of softening and cavity-formation, countless millions of bacilli are cast out daily with the sputa.

Second. The widespread diffusion of the parasite outside of the body has been demonstrated in the infectiveness of the dust and of the scrapings of the walls of rooms and wards occupied by patients with pulmonary consumption. Moreover, the greater prevalence of tuberculosis in crowded communities, the enormous mortality from the disease in prisons and institutions, and its frequent occurrence as a house-malady, suggest that the conditions favoring its continuance are those which foster the growth and spread of a specific contagion.

Third. In the language of parasitology the lungs constitute the chief seat of election! But, apart also from gross pulmonary lesions, the proportion of autopsies in which the bronchial glands are found tuberculous speaks unmistakably for direct infection in the exercise of their function as dust-filters.

On these grounds I believe that the registration of pulmonary tuberculosis would be beneficial—enforcing attention to those sanitary details so apt to be slighted or overlooked, and diminishing directly the danger of contagion in the community.

Infection through food is closely related also to the endemic prevalence of tuberculosis. The incidence of the disease in the mesenteric glands of infants indicates that the gastro-intestinal canal is a portal of infection only a little less wide than that of the respiratory system.

The question of tuberculosis is not, however, settled with the disinfection of the sputa of consumptive patients.

The hereditary transmission of the disease must be accepted, though an estimate of the frequency of this mode of infection must necessarily be uncertain, but for certain forms Baumgarten's theory of latency is particularly suggestive. Tuberculosis has been well called the *pébrine* of the human race. The analogy is striking, for not only, as you will remember, is the parasite of the silkworm-disease transmitted by direct contagion, but it also infests the eggs, which hatch, and may pass through various stages of development before they are finally destroyed.

Lastly, and here is consolation, the conditions which render individuals more or less immune scarcely yield in importance to those which maintain the vitality of the tubercle-bacilli in a community. So widespread is the seed that few of us escape infection, and the statistics of the Paris Morgue show that in more than 50 per cent. of adults the germs not only gain an entrance, but actually effect a lodgment. As a factor in tuberculosis, the *soil*, then, has a value equal almost to that which relates to the *seed*, and in taking measures to limit the diffusion of the parasite let us not forget the importance to the possible host of combating inherited weakness, of removing acquired debility, and of maintaining the nutrition at a standard of aggressive activity.

Dr. H. C. Wood: I came here not to speak but to learn, and thus far have been quite successful. I wish to quote from a letter from Dr. Billings which has been placed in my hands. He says: "I should like very

much to hear the discussion, but probably should have little to say, since I am doubtful as to what the decision of the College should be on this point. I presume that there are about six thousand people in Philadelphia affected with consumption, and that a considerable proportion of these have contracted the disease in infected houses. If it were possible by a systematic notification for the Board of Health to locate a considerable number of these infected houses, what steps would it take to purify them? How would it deal with those of the poorer classes who are affected with this disease, and with their furniture, bedding, and rooms? Until these questions are answered, I do not find it possible to form a definite opinion as to whether it is worth while to put in force a compulsory system of notification. Some of the worst infected rooms are probably those occupied by the criminal class, which is especially liable to this disease. For example, the Eastern Penitentiary is certainly thus infected; but in this I presume the Board has no jurisdiction.

"It occurs to me, that if the system of notification is to be tried, it might be best to commence with a limited area of the city in which the death-rate is now high; for example, the Seventeenth or the Seventh Ward, and see what results in diminishing the proportion of cases in this area can be obtained in the course of two or three years."

This thought has occurred to me, that has not been touched upon by any of the speakers: In a case of diphtheria the Board of Health is notified; the patient dies or gets well, and the room is disinfected. Suppose, however, a case of consumption: The Board of Health is notified, the house is disinfected to-day, but reinfection occurs to-morrow, and the end need not come for four or five years. Unless you add the power to forcibly remove the patient and shut him up in a hospital-jail where you can confine and permanently disinfect him, I do not see how you are going to get any good results from the process of disinfection. As far as disinfection goes, unless you can prevent to-morrow's reinfection, I see little use in to-day's disinfection. If, however, the Board of Health could disinfect houses in which phthisic cases have died, something might be achieved, but the ordinary death-notice is all the notification required for this.

Dr. Thomas J. Mays: It has been stated that consumption is less frequent in those parts of the Fifth Ward in the neighborhood of Spruce and Pine streets, and becomes more prevalent as we approach the poorer portion of the city. Dr. Flick's investigations extended over only a limited period of time, say twenty-five years. In that time he finds that about 25 per cent. of the houses in the Fifth Ward have become infected. I hold that if the investigations had extended over a longer period—say fifty, seventy-five, one hundred, or one hundred and twenty-five years—he would have been able to show that nearly every house in that ward was infected, according to the contagion-theory, that in nearly every house in that ward a consumptive had lived and died. The same argument applies to the investigations made in New Haven. I have in my possession a book reporting similar investigations made by Dr. Riffel in two old towns along the Rhine in Germany. He investigated the death-rate from phthisis in these towns for fifty, seventy-five, one hundred, and in some cases one hundred and fifty years. He found in one town at least—Karlsdorf—that at some time or other nearly every house had had a case of phthisis in it.

Dr. Flick also refers to the diminution of the phthisis-mortality in Berlin, London, and Philadelphia. I think that if he had consulted the death-rate from phthisis in these cities he would have found a gradual diminution in the death-rate from consumption before the bacillus-era began in 1882. I went over this subject some years ago and I found that in every large city there was a gradual diminution in the death-rate. Dr. Flick claims that the diminution in the death-rate of consumption, since 1882, in this city, has been due to the disinfection of the sputum. His own figures show, however, that there occurred a larger number of deaths from this disease during the nine years following 1882 than during the nine preceding years. In what way this makes a favorable showing for the theory of disinfection I am at a loss to understand. So far as I know there has been no Board of Health regulation in this city. So far as I know there has been no Board of Health regulation in Berlin, or London, or any other city, yet their deaths are gradually diminishing in number. If the gentlemen on the other side will look backward a hundred years they will find that the very experiment which they are so anxious to try now was tested with the utmost rigor, from 1782 to about 1855, in Naples. It was decreed that every physician who neglected to report a case be fined one hundred and eighty dollars; that the ceilings, walls, floors, doors, and windows of the room in which consumptives died be torn out and burned; that the bedding and furniture be also burned, and that such dwellings were not to be occupied for a year. The result was that the family with phthisis was shunned and driven to want. Houses in which consumptives died depreciated in value. The sick were neglected and inhumanly left to die, away from their families and friends. Did any good result from these laws? Brehmer states: "Concerning a diminution in the rate from phthisis in Naples the medical historians of that period are ignorant." According to Uffelmann (*Berlin. klin. Wochenschrift*, 1883, p. 369), Dr. de Renzi, the medical historian of Italy, states that the injury which had been inflicted on Naples by these laws was simply indescribable and he denounces the Neapolitan faculty in the severest terms for participating in their introduction.

In vol. xlv, p. 112, of the *British and Foreign Medico-Chirurgical Review* it is stated that Drs. Spatuzzi and Somma, "who have paid great attention to the mortuary returns in that city (Naples, about 1860), affirm that one-sixth or a seventh of the whole mortality is due to phthisis," and that Dr. de Renzi "marvels greatly (in 1863) that the city of Naples is fully as much liable to phthisis as either London or Paris, though the salutary condition of the climate should render it far less common."

If the death-rate from consumption was the same in Naples at the time segregation ceased as it was in other cities in which segregation was not practised, it is self-evident that such a measure can have no influence in diminishing the death-rate from this disease.

Dr. James Tyson: I had intended to say something this evening on this important subject, but almost every

point which occurred to me has been so well treated by others that I hesitate to add anything. I admit all that has been said with regard to the contagiousness of phthisis, as determined by experiment, but as to the actual spread of consumption from one person to another as the result of association—as to the degree of contagiousness, in a word—I agree entirely with Dr. Da Costa. Admitting the correctness of Dr. Flick's studies and Cornet's observations, it still comes to this, that the physician is competent to take care of this question without the intervention of the Board of Health. Just as the surgeon is qualified to take care of the matter of antisepsis and asepsis in his management of surgical cases, so the physician is competent to take care of the disinfection of utensils used by consumptives and the destruction of the germs which may be the cause of the disease, the more especially as such disinfection is acknowledged to be of the easiest kind. What Dr. Roberts has just said with regard to the situation ten years ago as to sepsis and antisepsis, could as well be alleged in favor of the position that I take—that the physician is competent to handle the difficulties. The surgeon did not call in the Board of Health to help him under like circumstances, but fought the battle alone, and won it triumphantly. The question has been studied experimentally and clinically, and we know exactly where to put our fingers to check the spread of consumption, as far as this is possible. We must attack the disease in two ways: first, the contagion must be destroyed as far as possible with the means at our disposal, and second, we must seek to change the soil on which it is known that the bacillus flourishes, by improving the general health of the individual, and thus increase his ability to repel the invader. I feel that we are entirely competent to handle this question without the aid of the Board of Health.

DR. ABBOTT: I have listened with much interest to both sides of the discussion, but must confess that I am not yet quite secure in my mind as to the proper course to be pursued. I am strongly inclined to the views expressed by Dr. Billings in his letter to the President. Tuberculosis is a widespread disease, with manifold expressions, and if our efforts are to be directed against it, in the full sense of the term, the problem is certainly beset with many difficulties.

In connection with the subject under discussion, the question that has constantly presented itself to me is: If the College sees proper to recommend that all houses in which the disease is located be reported to the authorities, has it any guarantee that their conditions will be improved? The object in reporting these houses is to secure complete disinfection of them, a process requiring conscientious attention to most minute details, to say nothing of a full knowledge of the requirements of the cases. If the Board of Health is in a position to assure us that these demands can and will be met, then I am in favor of the resolution. If not, then we have had a long discussion with but little result.

The ultimate object arrived at in the resolution I consider as most desirable, but will it be attained if the resolution is passed? We have abundant evidence in justification of the belief that localities occupied by persons suffering from the pulmonary form of tuberculosis, particularly, may and do become centers of infection, and it is highly desirable that such places should receive the attention that their character demands. Much has been said here this evening concerning the prevention of the spread of this disease by disinfecting the sputum, and this point has been accentuated as if the danger ended here. The danger does not end here. Sputum collected in a receptacle may remain perfectly harmless without disinfection or any other treatment whatever. The danger lies in the sputum *not* collected, but spat upon the floor, dried, ground into dust by the feet of passers-by, and ultimately inhaled into the lungs—a condition of affairs often seen in dwellings of the poor. The predominance of pulmonary tuberculosis over other manifestations of the disease is certainly, in part, accounted for in this way. Dr. Da Costa in his remarks has said that "bacilli" are everywhere present, and if this is the case how are we to escape them, etc.? His use of the term bacilli in its generic sense is misleading; I can hardly think he meant that *tubercle*-bacilli were everywhere present, for this is not the case. They *may be* present wherever tuberculous individuals *are* present or have been present, but to say that they *are* present in all places does not accord with the results of observation.

DR. FRANK WOODBURY: The facts collected with so much commendable diligence by Dr. Flick are susceptible of quite another interpretation. They certainly do not prove consumption a contagious disease, or that the bacillus tuberculosis is its sole cause. If he had confined himself to the task of showing that want of sunlight, dampness, and other mal-hygienic conditions were efficient causes of phthisis his data would have been equally applicable. Or if he had intended to prove that the habitations of some of the poorer inhabitants of this city were likely to act injuriously upon the occupants, so as to predispose them to phthisis, we might have been willing to go with him almost to any extent in making application to the Board of Health to destroy these sources of disease. We might admit that by adopting such drastic measures the mortality from tuberculosis would undoubtedly be greatly reduced. The total extinction of pulmonary consumption, under present conditions of civilized life, however, is entirely impracticable.

It may be admitted, if the proposed plan of registration and inspection were rigorously carried out, that the results would apparently support the claims advanced. The number of cases reported would certainly diminish to a remarkable degree; but the real explanation, however, of the diminution would be that a large number of cases would be concealed, and deaths would be reported as from other causes. Moreover, a large number of cases would object to the solicitude of the Board of Health for their welfare and leave the city. Physicians would have their sympathies appealed to by relatives, who might wish to conceal from the patient the fatal character of the malady, and would be in a dilemma between duty to their patients and duty to the State. In fact, registration would eventually divide physicians into classes—those who reported their consumptive patients and those who did not. The physicians having the reputation of not reporting their cases would naturally have a larger *clientèle* than others.

DR. S. SOLIS-COHEN: The question to be considered is simply this: Granting all that may be said concerning

the etiologic relations of the bacillus of Koch to tuberculosis, and granting all that is said as to the spread of infection from persons affected with tuberculous disease—on the whole, will the health and comfort of the community, including both the well and the sick, be better promoted by having all cases of tuberculosis registered or by not having them registered? So far as the sick are concerned, the disadvantages of registration are obvious. So far as the well are concerned, Dr. Da Costa has shown that the reasons advanced in support of the proposition that it is necessary to have cases of tuberculosis registered in order to protect the health of the community, cannot withstand critical analysis. I believe, moreover, that registration would be a detriment to the community, for the reason that when of two measures to prevent an evil, attention is concentrated on the less efficacious, the more efficacious is likely to be neglected. If we direct our attention too strongly toward germicidal measures we shall lose sight of the more important measures that relate to the general sanitation of cities, of houses, and of individuals. Tuberculosis among men is to be prevented by increasing the vitality of the race, by preventing the marriage of tuberculous and otherwise unfit persons, and by perfecting the sanitary environment and life of the individual. The true prophylaxis against tuberculosis begins, therefore, before conception; but as society has not reached the stage of development where such prophylaxis can be generally instituted, it becomes all the more necessary to insist upon those practical measures of individual and civic hygiene which must be our greatest dependence and to oppose whatever shall tend to obscure their importance.

As has been said by Dr. Woodbury, if Dr. Flick had started out to prove that consumption flourishes in overcrowded places and where misery, poverty, filth, and vice are congregated, his statistics could not be more admirably adapted to enforce that conclusion; but to prove that tuberculosis is contracted only or chiefly by living in houses in which persons having tuberculosis have previously resided, would require that a census be taken to find out concerning every house in the city whether at any time there had been a patient with tuberculosis living or dying in the house, and if so, how many cases had followed and at what intervals, and also to determine how many cases of tuberculosis had developed among those living in houses in which no one having tuberculosis had previously resided. Until statistics of this character are at hand, the case against the so-called infected houses, in districts in which the city, the houses, and the lives of the people furnish so many potent causes of impaired vitality, is at least "not proven." But grant that the proof of infection in houses is conclusive. Suppose that the houses are thoroughly disinfected, and even, referring to Dr. Wood's point, guarded against reinfection—what have we gained? We are told by the highest authorities that the bacillus of tubercle is about us everywhere. It exists, save at certain altitudes, or upon the sea, or in other specially favored regions, in the air we daily, momently breathe. Everyone is at some time exposed to the danger of inhaling it, and that it is inhaled by everybody is shown by the results of autopsies upon persons having no tuberculosis elsewhere, but in whom the bronchial glands are infected with the tubercle-bacillus. I believe that, according to some statistics, the proportion of persons so infected has been placed at 50 per cent. Is it not clear that, as was said by the President of the College in his Annual Address, in order to make the Board of Health laws effective, there would have to be instituted a system of espionage so that the tuberculous patient could be followed every day from the time of his rising up to that of his lying down, while seated in his house, or while walking by the way, to make sure that by no possibility should his sputum be deposited in any place where it could become dry and be carried into the air—a thing which is manifestly impossible. But if instruction only is to be given and no such rigorous supervision of individuals attempted, it is within the province and within the power of the attending physician to instruct his patients, and the intervention of the municipal officer is not required.

Therefore, because of the impracticability of this registration to effect anything positively, and because, negatively, it will have the effect of diverting attention from the fact that these streets or alleys, to which Dr. Flick directs attention, should be cleansed and widened, the houses properly drained and ventilated, the people properly fed and clothed, and otherwise protected from exhausting and depressing influences, I consider it to be the duty of the College to place its strong word on record against the proposed legislation.

Were the proposition in favor of a municipal hospital for tuberculosis, separated from the other recommendation, and properly safeguarded, I should be glad to vote for it.

Dr. Richard A. Cleeman: One very important point has not been alluded to. Statistics show that the death-rate from consumption is almost the same in every community, year after year. If there is any diminution, it is very small. This is directly opposed to the idea of the contagiousness of the disease. All other contagious diseases vary very much in their death-rate at different times. There is only one explanation by which we can conceive that phthisis is contagious and the death-rate always the same, and that is, that the whole of the community is thoroughly infected with the tubercle-bacillus, and that in the community there is a fixed number who are susceptible to the disease. Just as, statistically, we can calculate how many giants or how many dwarfs are in a community, so can we estimate the number of persons susceptible to phthisis.

In this view of the case, with the bacillus tuberculosis spread over the whole city, measures to be effective must be of a very extensive character. The mere reporting of a case now and then—for I believe the rule would be often neglected—would have very little effect. Measures to be effective must be thorough and they are the methods of general hygiene.

Dr. James B. Walker: We must look at the practical side of this matter, and ask what will be the benefit from registration? How much has typhoid fever in this city been diminished by the fact that we report our cases? Not in the least. The disinfection of the stools which the physician has directed has lessened the number of cases, as similar attention to the sputum may in phthisis. I am against placing phthisis on the list of diseases to be reported, for many reasons. I do not believe that this would confer a single benefit upon the city or its inhabitants. The physician is capable of doing all that

the Board of Health can, without the manifold evils and annoyances of public registration. The College should go on record against the registration of the disease. It should go on record also as believing that the disease is possibly contagious, and should recommend physicians to use the most strenuous efforts to prevent the transmission of the contagion.

DR. DA COSTA: I used the expression that the tubercle-bacilli were everywhere. A bacillus that is on the pavements, and in houses, that is wafted about in the air, that exists in milk, and on fruit sold in the markets, and, as has recently been demonstrated, is on the very money that we handle, may well be described as a bacillus that is everywhere. The tubercle-bacillus is so diffused that it can, indeed, be considered as everywhere present, and it is scarcely a figure of speech to so describe it.

With every word that Dr. Roberts has said, I agree. There is not a direction he has read I would not subscribe to and endeavor to enforce as an officer of an institution, or in private life. I hope, indeed, that every Fellow will go away to-night imbued with the necessity of carrying out all measures that have been brought forward with the view of destroying this scourge. But is it not better that we should do this as individual health-officers, than to have it done in a necessarily perfunctory manner by a Board of Health? The only way that the Board of Health could radically act to destroy the tuberculous material would be to burn every house that was supposed to be really infected, separate the tuberculous husband from the wife, take every child away, and cause such an upheaval in society as no community would submit to.

DR. FLICK: Dr. Williams, of the Brompton Hospital, has been quoted as an opponent of the theory of contagion, but he has written a paper in which he shows that a large number of nurses of the Brompton Hospital have contracted tuberculosis. I think that he has traced some fifteen or twenty cases.[1]

As to the ubiquity of the tubercle-bacillus, Koch and Cornet have disproved it. They have shown that the contagious environment of tuberculosis is limited. Cornet has made experiments with dust taken from the streets and many other places at random, and was unable to produce infection by inoculation. He has, moreover, made an investigation of the health of the street-cleaners of Berlin, and has found them freer from tuberculosis than any other class. It must be borne in mind that the isolated cases of infection of fruit and other articles which have been referred to are traceable to handling by consumptives. Many of the fruit-stand dealers have consumption.

With regard to the endeavor to ascribe the occurrence of the disease in certain houses to dampness, that can be disposed of in a moment. In one of the worst infected streets in the Fifth Ward, say Bay Street, at least 20 per cent. of the houses have not had a death from tuberculosis, although the sanitary condition is as bad as in the infected houses. Dampness can have no influence here.

As regards infection in hospitals, as I have said, Williams has written a paper in which he shows that fifteen or twenty nurses have contracted the disease in the Brompton Hospital. Cornet has written an elaborate history of hospital-infection. He has taken the general hospitals of Germany in which the nurses are permanent, and he finds that as high as 62 per cent. had tuberculosis. In my own class of residents at Blockley, sixteen in number, two died within three years of the disease, and I myself was for a time believed to be a victim.

It has been argued that we ought to trace the history of these houses for a longer period, say one hundred years. There is a limit to the infecting power of tubercle-contagion. What that limit is I cannot say; probably not very long. Unless cases occur within a few years of each other to keep up the chain of infection, the houses are no longer infected houses.

Italy has been quoted as an evidence of the non-effectiveness of preventive measures. I am surprised that this quotation is made so frequently after what has been written. I have shown by careful quotations from contemporary authorities—and authorities that cannot be doubted—that at the time when the laws were instituted in 1782 the mortality was about 10 per 1000, and that when preventive measures were abandoned, the mortality was so low in the extreme southern part of Italy that it was practically *nil*, 0.19 per 1000. Many who have written upon the subject have overlooked the fact that it is not the city of Naples but the kingdom of Naples that is spoken of. This comprised the southern half of Italy and Sicily. At first the northern part of Italy opposed the view of contagion and refused to accept any preventive measures. After some years it adopted preventive measures, but even at this day the mortality in the northern part of Italy is twice what it is in the southern part. These preventive efforts proved another point, and that is the local infection. The only practices that were of any benefit in the Kingdom of Naples were, first, isolation; and, second, compulsory disinfection. The preventive measures circled entirely about the household. The Italians did not know where the infection came from, but adopted crude measures of prevention. Yet with their crude measures they reduced the mortality to a minimum, and except for the fact that Italy became a health-resort for tuberculous persons, it probably now would have no tuberculosis. The statistics show that those parts of Italy that are health-resorts for tuberculous patients run up the mortality. This has been as high as 4 per 1000 in some of the resorts, but in the rest of the Kingdom of Naples the mortality is a fraction above 1 per 1000.

As to the competency of the physician to meet this question. In connection with this subject, we must bear in mind that every infectious disease is a law to itself. It is not fair to apply to tuberculosis the laws which govern diphtheria, smallpox, etc. The infecting material in tuberculosis is easily controlled. It comes from a single source. In smallpox it is difficult to control. If it were possible to sterilize all the sputa of consumptives we would not need disinfection. Such a thing is impossible, however, and therefore it is necessary that the room be disinfected. This requires great care, and unless the family is willing to undergo the expense it cannot be accomplished. If the physician were to devote half of his time to bring about proper disinfection he could not do it effectively.

Dr. Cleeman has advanced an argument against con-

[1] British Medical Journal, September 30, 1882.

tagion, which, strange to say, has been made for the other side by Dr. De Forest. Dr. De Forest claims that inasmuch as the number of infected houses is limited, the mortality rate should remain the same every year, because the number of exposures remains the same. The centers of infection remaining the same, the deaths should remain the same.

Tuberculosis and typhoid fever have been compared. The reporting of typhoid fever cannot bring about any results unless the lessons taught are acted upon. If the water-supply were made better we should have no typhoid fever. There is no analogy between typhoid fever and tuberculosis. Tuberculosis is infectious from the point at which it exists; typhoid fever infects our drinking-water. There is little danger from the room occupied by the typhoid-fever patient. The cases are not at all analogous.

A vote was then taken on the amendment offered by Dr. Flick; it was lost, and the original resolutions, as proposed by the Council, adopted, the President being requested to appoint a committee of five to present them to the Board of Health.

CORRESPONDENCE.

THE CLIMATOLOGY OF NEW MEXICO AND ARIZONA.

To the Editor of The Medical News,

Sir: In an article entitled "Health Resorts of the West and Southwest," by Dr. H. G. Wetherill, appearing in The Medical News, December 16, 1893, certain statements have been made regarding New Mexico and Arizona that certainly need correction. From the character of the article, they are either mistakes of ignorance or from information derived second-hand.

After speaking enthusiastically of Colorado and Southern California, the writer goes on to say that New Mexico, Western Texas, and Arizona are different in topography and climate from Colorado. To anyone familiar with the Territories in question, this criticism is faulty. Those who by residence or travel are fitted to judge know that the difference is simply one of degree, the general climate both of these Territories and of Colorado being that of an elevated, dry plateau, with a varying amount of moisture.

But the main errors and statements which this letter is intended to correct are not those of simple topographic conditions. The author says:

"In Southern New Mexico, Western Texas, and in Arizona, the elevation is less, the soil is different, the water so alkaline as to be distasteful and disturbing to those not accustomed to it, the rainfall much less, and the dust dreadful. In addition to all these, the hotels in Albuquerque, El Paso, and Phœnix are bad beyond endurance, the food is wretched, and the people, with a few exceptions, are not attractive companions. A Territory that has no more in associations or natural advantages than this, and is by reason of its heat, dust, bad water, and poor domiciles so uncomfortable, and is in addition as unhygienic as the filthy huts of the Mexican and Indian population can make it, is no place for a delicate Eastern invalid with a cultivated taste for many things that have become necessaries of life and are here unattainable."

I have reproduced this paragraph in its entirety, because there are sufficient witnesses to the falsity of those remarks, either in the shape of residents of this Territory, or visitors who, after spending a greater or less time, have returned to their Eastern homes.

To take up his criticisms *seriatim*: The Doctor doubtless knows that the main element in the climatic treatment of tuberculosis is the dryness and equability of a climate. He should also be aware, if he would take the trouble to study the Signal Service Reports that can be had on application, that New Mexico and Southern Arizona are the driest parts of the United States. He should also be aware that with a minimum amount of rainfall, there is also a greater amount of dust, which is probably experienced during the dry parts of the year in his favorite Eastern home. But this dust is not irritating; it is not permanently present, and it is not of daily occurrence; it is perceptible simply by contrast with a damp, moist country; the presence of dust is a necessary accompaniment of the absence of humidity. The heat he complains of is not excessive; it is not, so to speak, perspiratory heat; it is not a heat that compares with that of a short Eastern summer; it is not a heat that depresses the system, and renders heat-strokes common; it is not a heat that is followed by the electric disturbances that he experiences in his Jersey home. It is a heat that is felt simply on account of the rarefaction of the atmosphere; it is a heat that is perceptible in the sunlight, and, from the very rarefaction of the atmosphere, the shade is a cooling, grateful comparison. This heat that he seems to find so fearful has never been complained of by the residents of the Territories, and not even by those who have been sent here in a debilitated condition in search of health. It is a stimulating, refreshing, vivifying heat, not a depressing, stupefying, exhausting heat.

The bad water that he also lays unusual stress upon, I fear must exist simply in his imagination. It may be that he did experience one or two cases of alkaline water, but alkaline water in itself is not injurious. As a diuretic, as a flusher of the kidneys, as an excretory, generally carrying off rapidly and freely the waste-products of a disturbed system, it has no equal, and from some inherent quality, like that of the Delaware River, it possesses the peculiar faculty of purifying itself.

The poor houses and unhygienic conditions to which he alludes exist only in the houses of the extremely poor, and even they are more sanitary and are better fitted to their requirements than the houses and tenements of his own pauper population; but as a Westerner if visiting the East would not, in common justice, consider that the slums were an evidence of Eastern civilization, so he had no right, except the right of a disordered digestion, to consider the adobe houses of our Indian half-breeds an evidence of Western civilization.

The remark regarding the hotels along the line is, to say the least, unfair. The hotels in this locality will compare favorably with any hotel in any Eastern section he may pick out, and in any city of three times the size of those he alludes to. Luxuries, which he seems to consider as unattainable here are within the grasp of the poorest. California fruits, vegetables, our own grapes, are at our doors at a lower price than he pays

for them. The opinion of unbiased, unprejudiced observers has been that in the towns which he so remorselessly criticises the luxuries of life are attainable at less, or at all events at no greater price than they cost in the East. I doubt if there is anything which the most pampered, homesick, lungsick, querulous, cranky invalid could demand that cannot be obtained if he desires it, and at a trifling additional cost, should it not be already put within his reach.

But the meanest, the most unkind, the most uncalled-for criticism is upon those who have taken up their abode for better or worse within the borders of these Territories. He states that the people are not attractive companions. As a resident physician for five years within the city of Philadelphia and its vicinity, I can simply say that this statement is absolutely false. The people who have come here, either for health or in search of adventure, mercantile or otherwise, have been those who, accustomed to the best society of their native places, demand and will have all that makes congeniality, friendly association, and a kind regard for each other. In no place in the United States can there be found as cultured, refined, courteous men and women in proportion to the population as upon this former frontier line. The cricicism is at variance not only with the experience of those who have lived here for a number of years, but will not be borne out by the opinion of visitors in search of either health or pleasure. It is a misleading, unfounded criticism, which needs to be supported by better evidence than mere statement. I would like to know upon what personal experience the gentleman founds his remarks, as travel upon the railroad through the Territory of New Mexico is mostly done at night, and I am certain that so far as Albuquerque is concerned, he never pretended or never attempted to make himself acquainted, nor to seek to know any of the people of this town.

Another remark, as to the fact that in Arizona pulmonary tuberculosis is common and fatal among the native population, is not borne out by facts. He has mistaken tuberculosis for syphilis. This fact I have proved to my own satisfaction by a four years' experience as physician in charge of an Indian school, as well as by twelve years' acquaintance with this country, and an intimate, personal familiarity with the physicians practising therein.

I regret that it has become necessary to contradict so many of his statements, but such misleading opinions, based on but slight and in many cases no acquaintance with this country are so current among physicians of the extreme East that the time has come to put ourselves right before the profession. The leading physicians and specialists of the great Middle States, with Chicago as a center, have realized and known for the last fifteen years the capabilities of this Territory. They have made climatology a study and they are aware that within the banks of the Rio Grande Valley, from El Paso on the south to Embudo on the north, there extends a strip of country with a minimum rainfall and with a moderate degree of heat; from past experiences, they are learning how to utilize it. These same physicians are becoming acquainted with the fact that they cannot either conscientiously treat patients or give them advice regarding their every-day life from their offices in Chicago, but advise them to seek this country, and reside in that part of it to which a resident physician shall assign them.

It is well-nigh time that our extreme Eastern *confrères* gave up this habit of sending all classes of tuberculous trouble to an elevated region without regard to their condition; it is well-nigh time, too, that they stopped giving their patients elaborate instructions how and what to do on their arrival and residence here, unless those same Eastern physicians will take the trouble, will be conscientious enough, to visit, make a study of this plateau, exchange opinions and results, and then draw their own conclusions. It has not been three weeks since we were forced to correct an opinion by one of the brightest medical minds of this country, that a certain disease was frequent in New Mexico and Arizona, when a correspondence among resident practitioners disclosed the fact that no case had ever been known, extending over a period of practice amounting to twenty-five years.

It is time that this matter should be freely, frankly, and fairly discussed. I admit, and knowingly admit that there is no place upon this plateau to which all and every kind of tuberculosis can be sent. For the past twelve years, I with other physicians have been doing a sifting process among invalids sent to this country, advising one to stay here, the next to go higher, the third to go lower, and I regret to say, the fourth to go home.

All that we ask either as physicians or residents of this Territory, in common justice to ourselves and our profession, is a knowledge of our capabilities, of our resources, and equally so, a knowledge of those things in which we fall short; and we demand as a right, that this knowledge shall be obtained from reliable sources and after due, diligent, and painstaking inquiry.

James H. Wroth,
Ex-President of the New Mexico Medical Society.
Albuquerque, N. M.

NEWS ITEMS.

Dr. Walter D. Green has been appointed by Governor Pattison physician to the port of Philadelphia.

U. S. Marine-Hospital Service.—A board of medical officers will meet on Monday, April 16, 1894, in Washington, D. C., for the purpose of examining candidates for appointment to the grade of Assistant-Surgeon in the Marine-Hospital Service. Further information can be obtained from Dr. Walter Wyman, Supervising Surgeon-General of U. S. Marine-Hospital Service, Washington, D. C.

Eleventh International Medical Congress.—A circular of general information has been issued by the Secretary-General of the Eleventh International Medical Congress, to be held at Rome from March 29th to April 5th, copies of which, together with the travelling documents, can no doubt be obtained from the Chairman of the American National Committee, Dr. A. Jacobi, 110 West Thirty-fourth Street, New York.

Billroth, the distinguished surgeon of Vienna, died on February 6th, at the age of sixty-four years, while temporarily absent on a vacation. In 1855 he became

the assistant of Langenbeck in the University of Berlin; in 1859 professor of surgery in the University of Zurich, and in 1867 professor of surgery in the University of Vienna. He was a generous contributor to medical literature, his most notable work being a *Handbook of General and Special Pathology*. He was also one of the editors of the *Archiv für klinische Chirurgie*. His pupils include the names of many distinguished surgeons.

The Nurses' Bureau of the New York Academy of Medicine was opened on Monday, February 5, 1894. Each nurse who registers will be charged a fee of $2 a year for registry, and will be required to have an indorsement by two reputable physicians, who will be written to minutely as to their knowledge of her character and capacity as a nurse. Each time that a nurse is taken out by a patient, the patient will pay a fee of $2 to the bureau for this privilege. When a nurse leaves a case, the physician for whom she has been nursing the case will be written to for minute details as to her management of it, and in many instances the friends of the patient will also be written to. In this way the record of each nurse grows up by accretion, and if a nurse notably fails to perform her duties, she will not be permitted to have the privileges of the bureau.

At first it is proposed to have the rooms open from 8 A.M. to 10 P.M., and certain lists of names will be left with someone in the building over night. As soon as the bureau is running fairly well it will be kept open day and night. A telephone will be put in for the use of the bureau, and the superintendent will be a trained nurse. The work is under the charge of a committee consisting of Drs. S. S. Burt, W. E. Bullard, H. T. Hanks, and R. Van Santvoord.

BOOKS AND PAMPHLETS RECEIVED.

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Poliomyelitis. By J. T. Eskridge, M.D. Reprinted from the Texas Medical Journal.

Hemiparaplegia; with Report of a Case Completely Recovered after One Year's Duration. By L. Harrison Mettler, A.M., M.D. Reprinted from the Journal of the American Medical Association, 1893.

The Collegiate Degree as an Evidence of Fitness for the Study of Medicine. By L. Harrison Mettler, A.M., M.D. Reprinted from the Bulletin of the American Academy of Medicine, 1892.

A Clinical Lecture on: 1. Case of Poliomyelitis. 2. Case of Chorea. 3. Case of Sacro-iliac Arthritis, etc., probably Rheumatic. By J. T. Eskridge, M.D. Reprinted from the Virginia Medical Monthly, 1893.

The Essentials of Chemical Physiology, for the Use of Students. By W. D. Halliburton, M.D., F.R.S. London and New York: Longmans, Green & Co., 1893.

Exercise for Pulmonary Invalids. By Charles Denison, A.M., M.D. Denver: Chain & Hardy, 1893.

Connecticut State Medical Directory. Danbury: The Danbury Medical Printing Co., 1893.

Results of Aseptic Celiotomy. By William H. Wathen. A.M., M.D. Reprinted from the American Journal of Obstetrics, 1893.

Report on Nasal Surgery, with Illustrative Cases. By M. F. Coomes, A.M., M.D. Reprinted from the American Practitioner and News, 1893.

Aus dem hygienischen Institut der Universität. Ueber die antiseptische Kraft des Ichthyols. Von Dr. Rudolf Abel. Abdruck aus dem Centralblatt für Bakteriologie und Parasitenkunde, 1893, Band XIV, No. 13.

A Diatribe on Diphtheria. By James Hedenberg, M.D. Reprinted from the New England Medical Gazette, 1893.

Hydrocystoma. By A. R. Robinson, M.B., L.R.C.P.S. (Edin.). Reprinted from the Journal of Cutaneous and Genito-urinary Diseases, 1893.

The Results of Inoculations of Milch Cows with Cultures of the Bacillus Diphtheriæ. By A. C. Abbott, M.D. Reprinted from the Journal of Pathology and Bacteriology, 1893.

The Early Recognition of Tuberculosis. By Lawrence F. Flick, M.D. Reprinted from the University Medical Magazine, 1893.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland, Ninety-fourth Annual Session. Also Semi-annual Session. Baltimore: Griffin, Curley & Co., 1892.

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L'Ictiolo nelle Cura della Blennorragia. Per il Dott. Pio Colombini Ainto. Siena Tip. Edit. S. Bernardino, 1893.

Dott. Remo Segre. L'Ictiolo nella Terapia delle Forme Cutanee e Venereo-Sifilitiche. Communicazione fatta all' Associazione Medica Lombarda, nella Seduta del 15 Gennio, 1893.

A Plea for the Appropriation of Criminals Condemned to Capital Punishment to the Experimental Physiologist. Dy J. S. Pyle, M.D. Pamphlet. Peoria, Ill., 1893.

The Diseases of the Male Organs of Generation. By W. H. A. Jacobson, M.Ch. Oxon., F.R.C.S. Philadelphia: P. Blakiston, Son & Co., 1893.

Four Successful Nephrectomies: with Remarks. By Maurice H. Richardson, M.D. Reprinted from the Boston Medical and Surgical Journal, 1893.

A Contribution to the Surgery of the Gall-bladder. By Maurice H. Richardson, M.D. Reprinted from the Annals of Surgery, 1893.

Transactions of the Michigan State Medical Society for the Year 1893. Vol. XVII. Detroit: Published by the Society. John Bornman & Son, Printers, 1893.

Transactions of the Arizona Medical Association. Second Annual Session. Phœnix: Republican Print, 1893.

The Profession of Medicine as Sketched from the Outside and from the Inside. By S. W. Kelley, M.D. Reprinted from the Cleveland Medical Gazette, 1893.

The Throat and Nose, and their Diseases. By Lennox Browne, F.R.C.S.E. Fourth edition. Philadelphia: Lea Bros. & Co. London: Baillière, Tindall & Cox, 1893.

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Suturing the Tendo Achillis in the Correction of Deformities of the Feet. By H. Augustus Wilson, M.D. Reprinted from the International Medical Magazine, 1893.

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Sterilization of Milk at 75° C. (Pasteurization) and its Efficiency in Destroying Pathogenic Organisms. By Rowland Godfrey Freeman, M.D. Reprinted from the Medical Record, 1893.

Experiences in Pelvic Surgery. By A. V. L. Brokaw, M.D. Reprinted from the Transactions of the Southern Surgical and Gynecological Association, 1892.

Peritonitis from a Surgical Standpoint. By A. V. L. Brokaw, M.D. Reprinted from the Medical Fortnightly, 1892.

Observations on a Case of Recurrent Amebic Dysentery, with Successive Large Hepatic Abscesses. By John Winters Brannan, M.D. Reprinted from the New York Medical Journal, 1893.

Zymotic Diseases in Chicago. Sanitary Exhibit of the Illinois State Board of Health, World's Columbian Exposition, 1893. Springfield, Ill.: H. W. Rokker, State Printer and Binder, 1893.

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THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

NEW IDEAS WITH REFERENCE TO TWO WELL-KNOWN OPERATIONS.

BY WHITFIELD WARD, A.M., M.D.,

TEN YEARS SURGEON TO THE METROPOLITAN THROAT HOSPITAL, NEW YORK.

I. THE AMPUTATION OF THE TONSILS.

EXCISION of the tonsils is one of the most frequent operations in the vicinity of the mouth that the surgeon is called upon to perform. Notwithstanding this fact, there are at the present day but few operators who will enter upon its performance without a certain degree of hesitancy or trepidation.

The prime cause of this uneasiness on the part of the surgeon is, as we all know, the danger of alarming hemorrhage. At a meeting of the New York Academy of Medicine in February, 1893, the subject of tonsillar excision was pretty thoroughly discussed. Regarding the extraction of tonsils by means of the knife or guillotine, Dr. Morris J. Asche, under whose auspices the meeting was held, said that it was an extremely dangerous operation. He "did not mean to say that it was a difficult one to perform, but that there might be abnormal arterial distribution causing hemorrhage which could not be controlled." Dr. Asche furthermore stated that danger of serious hemorrhage could be referred to three sources: (1) abnormal distribution of vessels; (2) the venous plexus behind; (3) profuse capillary bleeding. The vessels being enlarged in hypertrophy of the tonsils, they are liable to remain open when divided, and thus cause serious hemorrhage. In the discussion that followed these remarks, although many of the gentlemen did not hold extreme views, yet, on account of the danger of hemorrhage, the majority were inclined to favor the substitution of other and less dangerous methods than the knife or the guillotine for the removal of hypertrophied tonsils.

The principal methods advocated as substitutes for the knife in tonsillotomy are three in number, viz., galvano-puncture, the cautery-snare, and the cold snare. Galvano-puncture, as its name indicates, consists simply in puncturing the enlarged gland with the cautery-needle, endeavoring in the operation to destroy as much as possible of the superabundant tissues.

Those who advocate this method advise that several punctures be made at a single sitting, in order to reduce the number of operations. Under the most favorable auspices, unless, forsooth, the portion to be removed is very small, galvano puncture will require not less than a dozen sittings to produce any decided result.

To those accustomed to make applications with the galvano-cautery, it is unnecessary to state that the pain produced by this method of operation offers quite a serious obstacle to its employment. Another decided objection is the frequency with which abscesses are produced in the punctured glands on account of blind pouches. Again, severe reaction will generally follow each operation, and not only produce much suffering, but also tend to the formation of connective tissue.

With reference to children, this form of operation should never be entertained, not only on account of the pain engendered, but also on account of the length of time required for its performance. When the gland to be removed is of large caliber, galvano-puncture is likewise impracticable, as the patience of the sufferer will have become exhausted long before the operation is completed. It is but fair to state that Dr. Knight, who is in a measure responsible for this method of operation, says that there are only four conditions in which he would resort to galvano-puncture: (1) when one can distinctly recognize vascular anomaly; (2) when the tonsil is deeply buried; (3) when there is hemophilia; (4) when the patient absolutely refuses to be cut. Personally I have had but a single experience with galvano-puncture, the patient, an adult male, falling under the fourth classification of Dr. Knight. When the operation was about half completed the patient stated that he had had quite enough and readily consented to the use of the tonsillotome.

When the snare came into general use several years ago for the extraction of polypoid and other tumors, it was hoped that an instrument had at last been found that would effectually take the place of the tonsillotome.

This hope, however, proved groundless, as practical experience has taught us that the pain attached to the removal of a tonsil with the cold-wire snare is of such an intense character as to preclude its employment. The cautery-snare offers many advantages over the cold wire, and has many advocates. The principal advantages of the former

method are twofold: the operation can be more rapidly performed, and there is much less pain. Several methods of tonsillar reduction other than those tabulated have been from time to time advocated, the principal of which are injections into the body of the gland, and local external applications of caustic or astringent solutions.

At the present time, however, these latter forms of treatment are but little employed.

The only operation which, according to my view, should be resorted to for the removal of hypertrophied tonsils is excision with the tonsillotome.

It is undoubtedly the consensus of opinion of all surgeons that, barring the one danger of hemorrhage, the removal of the tonsils by means of the guillotine is *par excellence* the speediest, the safest, and the most thorough method. In my estimation the dangers of hemorrhage have been greatly overestimated. During sixteen years' experience in both hospital and private practice, in which I have operated upward of five hundred times, I have met with but a single instance of alarming hemorrhage. The bleeding in the case referred to—an out-door dispensary patient—consisted of a slight oozing which continued for several days, the patient being under the care of a homeopath who virtually did nothing. A single application of the galvanocautery stopped the hemorrhage, and the patient, although he had lost a great deal of blood, made a good recovery. Although there are several cases of alarming hemorrhage on record from tonsillotomy, yet there does not seem to be an authenticated case of fatal termination. With regard to abnormal distribution of the carotid, the fear of which has led many to abandon the operation: even though such a condition should prevail, there is no danger of its severance providing the operation be performed properly.

The question that has prompted the writing of this paper is: Can the hemorrhage following tonsillotomy be prevented? If this query can be answered affirmatively the only obstacle to the use of the tonsillotome will be removed, and excision by means of this instrument will be elevated to its proper position in buccal surgery.

About two years ago, yielding to the popular demand, I began to use a 4 per cent. solution of cocain in the form of a spray, from ten to fifteen minutes prior to the operation.

After operating several times on cocainized tonsils, I noticed that the bleeding immediately succeeding the severance of the glands was considerably less than that which it had been my custom to meet with before I had made use of the cocain-spray. After using the spray for about six months I resorted to the use of an 8 per cent. solution, and instead of applying it in the form of a spray, I injected the drug deep into the body of the gland to be removed, allowing an interval of about ten minutes to intervene before operating. The results were beyond my expectations. In a series of twenty cases not more than a dram of blood was lost in any individual case. Those gentlemen who are accustomed to operate in the nasal cavities are thoroughly acquainted with the retractile action of cocain upon the turgid membrane. In cases of small swellings a single application of cocain will oftentimes cause them to disappear entirely for the time being. Another well-known fact is that tissues over which the cocain-solution has been applied will present a blanched appearance for quite a time. This latter effect is the direct result of the peculiar contractile action of cocain upon the plexus of bloodvessels. In the case of excision of the tonsils, cocain undoubtedly contracts the mouths of the vessels in the same manner, and when they are severed holds them so until coagulation takes place. If the tonsil be inspected a few moments after the cocain injection the pallid appearance mentioned with reference to the nasal mucous membrane will likewise be noticeable, although it will not be quite so marked.

Although the cocain when used in the manner indicated proved highly satisfactory, the thought occurred to me that possibly less bleeding would occur after excision of the tonsils if some styptic were to be combined with the cocain and the resulting solution injected in the manner already described. After some little experimentation with different solutions the following formula was used:

℞.—Sol. cocain. hydrochlor. } . āā 10 per cent.
Sol. ferri subsulph. }

Of ten cases in adults experimented upon with this combination, in four the operations were practically bloodless, while in the remainder the bleeding consisted of but a slight oozing from the stump, and this continued but a few moments.

In all of my cases an ordinary hypodermatic syringe was used and the needle inserted successively at several points deeply into the body of the gland and beyond, if possible, the point of severance. The amount of the solution injected was from 30 to 60 drops, the endeavor being made to insert as much as the body would hold.

As a result of these researches I have every reason to believe that this combination of cocain and iron will prove of inestimable value in controlling tonsillar hemorrhage. As I have already shown, the effect of cocain is to constrict the bloodvessels, and if we add to this action the coagulating powers of the ferrous solution it would be but natural to infer that any ordinary bleeding should be entirely controlled. With regard to the

secondary hemorrhages that not infrequently follow tonsillotomy, I have not had a single instance since using the cocain-preparations. My opinion of these accidents is that the sudden shock to the system produced by the operation causes a temporary diminution of the blood-supply to the gland, and that, when the normal circulation is reëstablished, the mouths of the severed vessels not being contracted, alarming hemorrhage is produced.

The successful performance of tonsillotomy depends in a great measure not only upon the style of instrument used, but also upon the manner in which the operation is performed.

Many surgeons recommend the French tonsillotome as the most efficient instrument. There is one decided objection to the French guillotine, and that is, that being provided with a prong or pair of prongs, a preliminary spiking of the gland is necessitated. This transfixion of the hypertrophied gland not only unnecessarily compromises the operation, but seems to drag the gland too far out of its bed, which in unskilful hands endangers a too deep cutting. It is probable that some of the cases of severe hemorrhage on record were produced in this manner. The majority of experts favor the employment of the late Dr. Mackenzie's tonsillotome. One will seldom meet with a tonsil requiring the exhibition of the knife that cannot be thoroughly extracted with this instrument.

If there is not enough of the gland exposed to be included in the ring of the tonsillotome, external pressure by an assistant's hand will generally cause a sufficient protrusion. There is one fault with regard to Mackenzie's tonsillotome that has not hitherto seemed to have been overcome, and that is the knife, being pushed backwards through the body of the gland, will readily slip off the tonsil unless this be snugly encircled in the ring through which the blade plays.

To obviate this difficulty I have designed a special instrument which, it seems to me, should accomplish the purpose for which it was invented.

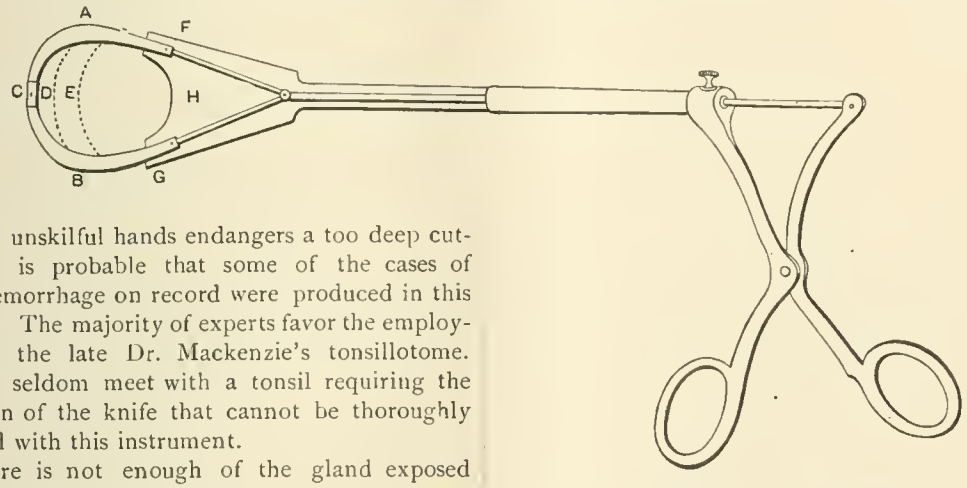
In this instrument the knife-blades, A B, are united at C by a loose joint, the ends, F G, being connected with a central rod to which the handle is attached, in the manner shown in the drawing.

The size of the ring designed to encircle the tonsil is regulated by the movements of the scissors-handle (see dotted lines, D E), the loose joints at F and G playing up and down in slots in the V-shaped framework, H.

The principal feature of this instrument is its adaptability to tonsils of any size. The knife-blade circle, as shown by dotted lines, can be regulated to any desired size either before introduction into the mouth or after the tumor is encircled. Another feature is that when the instrument is operated the blades are compressed laterally as well as drawn from behind forward, thus insuring incision on either side with the backward cutting. This constriction of the gland on either side insures a much better purchase and reduces to a minimum the danger of slipping.

There are several special points that should recommend the adoption of this style of tonsillotome:

1. It is universal in its character—one instrument taking the place of the several different-sized guillotines previously required.



2. Small portions of tonsils can be as readily nipped off as large ones.

3. It is rapid in its action on account of the gland being severed laterally as well as from behind forward.

4. The blades, being turned inwards and sinking at once into the body of the gland, require no guards.

5. Its mechanism is exceedingly simple and cannot readily be disarranged.

The manner in which an enlarged tonsil is removed with this instrument is as follows:

The tonsillotome, being set to the proper size, is to be firmly grasped in the hand on the same side as the tonsil to be excised; the instrument is now introduced, the gland encircled, and forcible pressure exerted upon the handle of the tonsillotome, using the thumb as a lever, the operation being completed as speedily as possible.

The use of a tongue-depressor in tonsillotomy is not only unnecessary but also decidedly detrimental. No matter what style of tonsillotome be used, the operation can best be performed by pressing upon the exposed side of the instrument by the forefinger of the disengaged hand, introduced well into the mouth. The object of this manipulation is to keep the ring well down upon the tonsil until the latter is firmly grasped.

There seems to be much diversity of opinion regarding the amount of tonsil that should be removed. Many surgeons advocate the extraction of as much as possible of the hypertrophied gland. Such advice is not only erroneous but positively harmful, in that it engenders a too deep cutting, and should there chance to be an abnormal distribution of the vessels a dangerous hemorrhage might be the result.

According to my experience the superfluous portion only of the enlarged body should be removed. An excellent plan to follow in this operation is to remove only that portion of the hypertrophied tonsil that juts out beyond the pillars of the fauces.

Regarding the cases selected for operation the surgeon should at all times be governed by common sense. Oftentimes tonsils which in one case would require removal would not require extraction in another, on account of the increased size of the buccal cavity. Again, a diseased condition of the tonsils other than hypertrophy, as, for instance, chronic follicular tonsillitis, oftentimes demands the operation before a permanent cure can be effected.

As a general rule tonsillotomy is demanded when the tonsils offer obstacles to breathing; interfere with speech; prevent full play to the velum; hinder the escape of post-nasal discharges; interrupt deglutition; and produce deafness or other aural difficulty.

In the writing of this article it has been my earnest endeavor to demonstrate that the oft-neglected operation of tonsillotomy should be performed by the surgeon without the slightest degree of hesitation, provided the subjoined precepts be observed:

1. The proper selection of the cases for operation.
2. The injection of cocain and iron.
3. The selection of the proper instrument.
4. The proper performance of the several steps of the operation.

II. The Amputation of the Uvula.

The amputation of an elongated uvula, although generally considered an exceedingly simple operation, oftentimes requires the exhibition of a great amount of skill.

In a paper that I contributed several years ago to the columns of the *American Journal of the Medical Sciences*, I had the pleasure of directing the attention of the medical profession to the importance of the uvula from a physiologic standpoint, and to the danger of injuring the voice by a too free exhibition of the knife.

In order to be thoroughly understood by those not acquainted with the subject, it will be necessary to give a brief *résumé* of the subject in the present paper.

The tone-waves that are created by the vibratory action of the vocal bands pursue three different courses in their journey from the body, viz.: through the mouth; through the nasal organs; and through the mouth and nose combined. The direction that each wave takes depends entirely upon its position in the voice-register. During the vocalization of sounds that pass through the nose alone, the velum rests throughout its entire extent upon the dorsum of the tongue, thus shutting off all communication between the cavities of the mouth and posterior nares. During the intonation of sounds that pass through the mouth alone, the soft palate is pressed tightly against the pharynx, the tone-waves thus finding an exit only by the mouth.

During the singing of tones that issue in the same degree from both nose and mouth, the pendulous velum is poised in the back of the mouth at an equal distance from the tongue and the pharyngeal wall. When the velum is pressed against the back of the tongue the uvula lies dormant upon the surface of the lingual organ; when, however, the palate begins to rise, the uvula, which has hitherto been inactive, stretches itself suddenly, becoming an active participant. As the velum recedes from the tongue, the attached uvula rises and accompanies it in its journey upward, until finally its tip only touches the back of the lingual organ; when this point is reached, if the uvula is of the normal size, the velum occupies the median line of the mouth—that is to say, it is equidistant from the tongue and the pharynx. At about this time, as the vocalist proceeds in the ascending scale, the uvula will be seen to be drawn speedily upward, producing a prominence on the posterior surface of the soft palate. This eminence increases in size as the uvula is drawn upward, and reaches its maximum when the latter body has retreated to its fullest extent. The function of this posterior palatine eminence is to act as a support to the velum by impinging against the posterior pharyngeal wall.

The function of the uvula, then, is to act as a prop to the velum, using the tongue as a basis of support during the rendition of the lower half of the register, and the pharynx during the production of the upper half. If the velum were to be deprived of this support, an undue amount of vibratory action would be superinduced by the escaping tone-waves, which would impart an abnormal amount of

tremulousness to the voice. When the uvula is abnormally long it will be utterly impossible for the velum to perform the movements described in a proper manner, on account of the extra weight imposed by the elongated body.

The amputation of the excessive portion of the uvula then becomes a paramount necessity. We come now to a consideration of a highly important point, the determining of the amount of an elongated uvula that should be removed. The settlement of this point is oftentimes a difficult matter, as a uvula that might be of a sufficient length to interfere with the vocalatory efforts of one individual, would be of the proper dimensions in another person, on account of the difference in the size of the cavity of the mouth. An excellent rule to guide the surgeon in the settlement of this point is to gently depress the tongue, allowing it to arch slightly at the base, at the same time instructing the patient to relax his velum. If the uvula is of normal length its tip will just touch the arched portion of the dorsum of the tongue; but if, on the contrary, it is elongated, the superabundant portion will lie flaccid upon the lingual organ. With reference to the style of instrument used in amputating the uvula I would say a word. It would naturally seem to the uninitiated that the guillotine would be the simplest and most effective instrument with which to perform this simple operation. Such, indeed, would be the fact if the patient could always be depended upon to hold the velum perfectly quiet. But unfortunately the reverse of this statement is the rule, the velum being prone to change its position upon the slightest provocation; and should this accident happen at the instant the knife is sprung, an undue amount may be amputated, and the important function of the organ destroyed. I have seen this result follow the use of the uvulatome many times, and doubtless other surgeons have had the same experience. The manner in which the amputation of the uvula is generally performed is as follows: The body is grasped just below the point of severance by means of an ordinary pair of spring-forceps held in one hand, and the excessive portion is snipped off through the agency of a pair of long curved scissors held in the disengaged hand.

There are several decided objections to this method of operation. In the first place, the assistance of the patient is always required to handle the spatula. In many cases, on account of age, nervousness, or other cause, the aid of the patient cannot be relied upon. In the second place, it is difficult to gauge the proper amount to be severed, because the dragging of the body forward with the forceps has a tendency to lengthen it. Again, on account of the pulling forward of the body to be amputated, the stump left after the operation is inclined to be very irregular.

I have lately devised an instrument which I feel certain will obviate these difficulties.

This device consists essentially of two distinct instruments united, namely, forceps and scissors —the arms of the latter being attached to a rod by which it can be operated forward and backward. In manipulating this form of uvulatome the rod is pulled out to its fullest extent, which closes the scissors; the curved handles of the forceps is then grasped, the thumb resting on the thumb-piece of the rod. The uvula is now seized at the point of severance by the jaws of the forceps and clipped by pushing the rod home. The scissors-portion of the instrument is made to rapidly open and close by the revolution of the handles around a curve located on either arm of the forceps. The advantages of this instrument can be seen at a glance:

1. But one hand being necessary to operate it, the other is left free to operate the spatula.

2. The surgeon can see what he is doing at all stages of the operation, and need make no mistake.

3. The stump will be perfectly clean and even.

PHYSICAL EDUCATION.

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Physical education is a subject about which a great deal is being written. This is due to the fact that within the last ten years all the leading colleges, academies, and schools for men, women, and children have paid greater attention to the ever-increasing demand for knowledge. Realizing that the human mechanism must be in perfect order to accomplish the best mental results, these institutions have seen the necessity for making the structures well balanced in body and mind. Numerous are the statistics that certify to the good results that physical education has accomplished. Yet one must not imagine for a moment that physical education will apply to all constitutions; it will not, as I hope to show a little later. Education, properly speaking, has to do with everything that will develop any part of the human frame, mentally, morally, physically, or spiritually. In using the word education, I might more properly have said every department of the being Man, in the generic sense, because no one department can be educated unless some one or other department suffers. Do we not see thousands of men and women who forget all about their spiritual nature, while their mental nature predominates over worldly things—beings who seem to have lost all traces of spiritual instinct, although they have wonderful mental capacity and physical development, becom-

ing in fact monstrosities, because there is an utter lack of equilibrium between the parts of their being which depend for their support upon the coördination of every part.

The majority of schools for physical education are empiric because those having charge of them know absolutely nothing about the construction of the human frame and the laws governing the different physiologic phenomena taking place therein. I venture to say that it has never entered the minds of scores of teachers of physical education that many of their pupils are those who, in the first place, do not need physical work, but who need absolute rest, and this rest must frequently extend over a long period. Those who are familiar with the "rest-cure" of Dr. S. Weir Mitchell well know how essential is rest for thousands of persons. Ignorance of a want of rest to begin with—and I mean absolute rest in bed in some cases—has led many a man to his grave who has thought to find a panacea in physical culture. Movements are a most potent means for affecting the body, as potent as drugs, and is it any wonder that so many men die with diseases of the lungs, the heart, or the nervous system, and their associates, when these movements are prescribed by an empiric? Imagine a man practising medicine without a degree, and how much faith would any sensible patient have in him. Quackery is practised every day in physical education, and in many ways; for example, men who have lung-troubles, or a great predisposition thereto, are prescribed movements with chest-weights (because these men usually have hollow, narrow, and contracted chests), which will exercise the muscles covering the chest and back, and the movement is frequently too violent for the pulmonary condition, no matter how slight it may be, the result being an aggravation of the trouble instead of its alleviation. In another case a person who has cardiac palpitation, or it may be valvular disease, is told to take a light run; a third is told to use the high pulley and is shown certain movements for the lower or lumbar region of the spinal column, in order to develop certain muscles there. In this region will be found the kidneys, and they are surrounded on all sides by muscles and bound down by tissue. Imagine a man being told to perform such a movement for a weak back, when the weakness he complained of was due to disease of these organs. It amounts to just the same thing as telling a person who has worked too hard mentally to keep on working; in both cases the trouble is aggravated, and anyone can see the folly of such a course.

How many persons who think of taking a systematic course of physical work ask themselves the following questions: Do I need any work at all? If I need work, what kind do I need? How much do I need? What is the most proper time for exercising? How am I to know whether it is benefiting me or not? What is the state of my constitution? Are there any accessory conditions I must observe, and what are they?

I have already shown why it is important for a person who anticipates taking a course in physical work to undergo a rigid medical examination at the outset, but it will not be amiss for me to strengthen the importance of this by saying that in cases in which disease of the heart, lungs, or kidneys exists, there is danger of causing sudden death by the use of apparatus. When exercise is doing good the resulting phenomena will be as follows: Increase in appetite; regularity of heart-impulse; increased pulmonary capacity; bright color of skin; increase in size and tone of muscles; increase in bodily weight (training excepted); and good sleep. If it be causing harm we have the following symptoms: Appetite impaired or lost; irregular impulse of heart; pallor of skin; decrease in size and tone of muscles; loss of weight; headache; nervousness, causing sleeplessness; slight fever, which resembles typhoid; and a dry throat, at times followed by a slight cough, which not infrequently leads to bronchial or pulmonary complaint.

Every movement of the body is simply a physical expression of a nervous impression produced either by the brain or spinal cord, and in all voluntary movements the primary impulse starts from the brain; hence we see that movements develop not only physical powers but cerebral powers as well. If a person wishes to arrive at a healthful development of his body, he must begin with the primitive type and gradually advance in alphabetic order, just as a child does when it is taught to read. A proper coördination of any movement depends upon a proper state of the mind; hence we see that if the mental faculties are not in a condition of stability, the body as a whole is not in harmonious accord with the mind. If an exercise is to be correctly performed it must be based upon the temperament and character of the person who is about to perform it, so that each department of his whole being will work in harmony with its fellow-departments; it is in this way alone that the human organism will become capable of perfect development, thus bringing its several parts into perfect harmony.

There is a limit to the powers of every being upon earth, and with man it will be found that this limit is fixed by his bodily powers, as well as by his mental faculties. If a movement be applied incorrectly, the faculty of an individual will not infrequently be perverted, and therefore we see that such a movement is injurious, and detrimental to symmetric development. The over-development of one part is always accompanied by a corresponding weakness

in its sister part. We all know how very helpless the left hand of myriads of persons is. This is very easily explained. In our bodies will be found a certain quantity of blood, about one-twelfth or one-fourteenth the body weight; exercise increases the flow of blood to a part; we exercise our right arm more than our left and more blood goes to it. We continue to use it, and the bloodvessels being nothing more than elastic tubes, expand and after awhile their caliber becomes permanently larger, and as fluids flow in the direction of least resistance, a greater quantity of blood goes to the right arm than to the left, and the left suffers to a greater or less extent; the result being that the left arm grows smaller according to its decrease in blood-supply, while the right grows larger in proportion to the amount of blood it receives. This principle applies not only to the upper extremities, but to all parts of the body. Symmetry of body in its broadest sense, *i. e.*, spiritually, mentally, morally, socially, physically, and politically, is the great aim of all properly prescribed exercise, because healthful power is due to a simultaneous action of all parts of the body, and to produce power and motion in such a way that the maximum force may be attained, it must coöperate simultaneously in every part.

From this we see that the terms physical force and perfect health are correlative, as both depend upon harmony among all parts of the human organism. If one will begin with the simplest kind of exercise and gradually advance, he will be able in due time to accomplish feats that were well-nigh impossible at first, and without danger of jeopardizing his constitution, as he will acquire an instinctive knowledge of what he is capable of undertaking. It is when one does not regard this knowledge that disease is produced.

If we classify the different phenomena that take place in our bodies, we may put them under three heads: mechanical, chemic, and dynamic. The first include circulation, deglutition, mastication, respiration, etc.; the second, nutrition, sanguification, secretion, excretion, assimilation, and the like; and the last are merely evidences of the mind which we see in our intellectual and moral powers. Every vital act, no matter how small or how great it may be, is produced under the combined influence of these three classes of phenomena, and it is by their conjoint action that a perfect organization characterizes itself; moreover, when this action is disturbed, an alteration in function takes place, and this in nearly every case is followed by disease. If the harmony of any one part be deranged it may be reëstablished by increasing the vital activity of the part, and this can be accomplished more perfectly by exciting the blood-current by exercise than in any other way, thus supplying a natural means, which is physiologic in nature, instead of using drugs that are therapeutic in their nature, and are used to change pathologic to physiologic conditions. Many persons laugh when they are shown free movements, because these movements are so simple; but it is frequently from their simplicity that the good is derived which one receives.

Variety of exercise is a most important factor, in bodily as well as in mental work, because by changing from one form of exercise to another, different sets or groups of muscles are used, while others are at rest, and in this way there is less danger of overworking the body. The special kind of exercise one usually needs can only be mapped out by a physician after making a most thorough medical examination. Strict attention should be paid to the prescribed course and a faithful pursuance of it until the body becomes symmetric.

Physical culture for women is most beneficial, and nearly every woman needs it in a greater or less degree; yet there are some for whom it would be certain death, and especially so when prescribed by an empiric. Women's occupations are more sedentary and their exercise must be simpler and lighter than that prescribed for men, because their muscles are weaker. As a rule one will find that women are very weak and poorly developed about the arms, back, and chest, while their lower extremities are well developed; so much so that the figure is anything but symmetric. Exercises can be prescribed that will change, strengthen, and develop the arms, back, and chest, giving as a final result a symmetric figure. More care is neccssary in prescribing exercise for women, because by making inquiry into the heredity of most women, we find that their mothers, grandmothers, and great-grandmothers have never taken any exercise whatsoever; but with men such is not the case, and we find that for generations exercise of some sort or other has been indulged in by the father. If persons knew a little more about the scientific care of themselves, the tendency to disease would be greatly diminished, and in diminishing this tendency I am sure there would be an increase in their moral and spiritual attributes. I have seen many a person changed, by observing scientific rules while in training for an athletic contest, from a state of immorality to one of noble-mindedness; and I feel sure that this was due to the fact that the training, which caused the elimination of certain waste materials which are bodily depressants, brought new life to him, thus enabling him to develop qualities which were blunted or made dormant by the retention of these materials.

Persons in exercising should always remember that the exercise indulged in should invariably keep pace with one's strength. A disregard of this will

unquestionably, sooner or later, produce disease of some kind. Over-ambition and anxiety have sent many strong healthy men and women to premature graves. I venture to say that nine-tenths of all persons who take exercise, rarely if ever ask themselves the questions I have enumerated, and even when such has been the case, have never followed a prescribed course under the care of a specialist. If those who need a course of exercise would consult an experienced physician, just as they do when attacked by disease, there would not be the predisposition to disease caused by the thousand and one apparatuses in existence.

THE PROGNOSTIC SIGNIFICANCE OF TUBE-CASTS.[1]

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No physician in active practice need be reminded of the fact that, although every physician will admit the desirability of having data from which he can predict the probable result in a given case of chronic nephritis, as yet no such reliable data exist.

Without stopping to discuss the general symptoms of chronic nephritis, for the purpose of estimating their prognostic significance, I will pass at once to the subject before us, and announce my conviction that the study of tube-casts furnishes the best basis for a reliable prognosis in any case of inflammation of the renal parenchyma.

This brings us to the first practical question, namely: What do we mean by "tube-casts"? The answer is very simple: Tube-casts are cylindriform bodies formed in the renal tubules, accurately representing the caliber and condition of the tubules in which they are found. This is equivalent to saying that the casts disclose the pathologic status of the tubules, and that by studying the casts from time to time, the progress of a given case toward recovery, or the reverse, may be followed.

An important preliminary to the study of the prognostic indications of tube-casts is a recognition of the varieties and their proper grouping or classification. Obviously the classification of tube-casts should be based upon their pathologic derivation, if this can be determined, as I think it can in all cases. A practical study of tube-casts, in connection with other clinical manifestions of renal diseases, will convince the observer, first, that all tube-casts are the result of some form or some degree of nephritis; second, that certain casts are the product of, and therefore denote, non-exudative inflammation, which is nothing more or less than a simple catarrhal inflammation as limited and defined by Ziegler; third, that certain other casts are the product of, and therefore denote, exudative or croupous inflammation; fourth, that each class has its varieties, which are easily recognized by characteristic and uniform peculiarities of structure, and that these peculiarities of structure are associated with, and therefore denote, characteristic and uniform pathologic lesions. Consequently I am justified in assuming and asserting that the tube-cast, if properly studied and understood, sustains the most important relation to prognosis. On pathologic grounds I suggest the following classification:

VARIETIES OF TUBE-CASTS.

1. Casts of non-exudative origin.
   - *a.* Mucin-casts (or mucous casts).
   - *b.* Mucin-casts enclosing cell-forms.
   - *c.* Mucin-casts enclosing crystals.
2. Exudative casts (fibrinous casts).
   - *a.* Hyaline casts.
   - *b.* Waxy or amyloid casts.
   - *c.* Blood-casts.
   - *d.* Epithelial casts { small. / large.
   - *e.* Granular casts { small. / large.
   - *f.* Fatty casts { small. / large.

The prognostic inferences to be derived from casts are based:

First. On the origin of casts, whether non-exudative or exudative—that is, whether mucous or fibrinous. If the former, it establishes the fact that the lesion is a catarrhal one only, and therefore at the worst is limited to a cloudy swelling of the renal epithelium, a condition that always warrants a favorable prognosis; if the latter, it warrants the conclusion that a true croupous inflammation, with characteristic exudation, is present, and the prognosis must be reserved until after mature and deliberate investigation has been made.

The general professional opinion is that these mucous casts are practically of no importance so far as regards prognosis or treatment; but it is nevertheless true that they constitute a certain indication of the approach of true chronic nephritis, and it is only a question of time when catarrhal nephritis, as indicated by mucous casts, will become croupous or exudative nephritis, with characteristic hyaline casts.

The general professional opinion is that hyaline casts are scarcely less than a death-sentence—at least that recovery is very unlikely to occur after true fibrinous casts have appeared. But my experience during the past ten years fully warrants me in asserting that recovery is not uncommon, and

[1] The Address in Medicine before the Illinois State Medical Society, at its meeting in Chicago, May, 1893.

ought not to be unexpected after the presence of hyaline casts denotes the development of a true croupous nephritis.

Second. The prognostic significance of casts depends upon their size, or diameter. This applies to a certain extent to all casts, but more particularly to the epithelial and fatty varieties. In my classification I have included "small" and "large" casts. The small casts are formed in tubules that are not yet denuded of their epithelium, and therefore are not essentially damaged by degenerative changes. They point to the fact that the caliber of the tubes has not been increased by exuviation of their epithelium, and hence they *must* have been formed in tubules whose functional capacity is not materially diminished. Such casts warrant a fairly favorable prognosis, as it is not unreasonable to expect that tubules that still retain their specialized functional cells, although somewhat swollen and cloudy, may recover both their structural and functional integrity, and experience abundantly confirms the foregoing prophecy. On the other hand, casts of large diameter originate in tubules from which the epithelium has disappeared, either in flakes or patches, by a process of exuviation, or else singly, or by twos and threes, on account of degenerative changes. This indicates a condition of great gravity, and always requires an unfavorable prognosis, because it furnishes infallible proof that tubules so denuded are no longer endowed with functional power. But if large and small casts occur in association, and if the small casts predominate, thus indicating that the majority of the tubules still retain their epithelium, a possible recovery may be predicated.

Third. The prognostic significance of casts depends upon their regularity or symmetry. A straight symmetrical cast, of uniform size and appearance, must have been formed in a tube not yet distorted and twisted out of shape by the encroachment of pathologic connective tissue. It indicates, therefore, the absence of cirrhotic change, and certainly shows that the tubes in which the casts in question were formed have not been damaged by pathologic intertubal deposit. On the other hand, if the cast is distorted, twisted, and asymmetrical, it unerringly points to the fact that it was formed in a distorted, twisted, and asymmetric tube—a tube environed and strangulated by connective tissue, abnormal as to locality, quantity, and behavior. In other words, it proves that the process of cirrhosis is well advanced and that the kidney is damaged beyond any possible recovery. Treatment may retard the progress of the disease, but the ultimate history of the case is fixed beyond recall. In all cases of renal cirrhosis—especially those of rheumatic or gouty origin—this point is an exceedingly important one, as the prognosis must necessarily depend upon the degree of renal cirrhosis present, and I know of no way to decide the matter except by a microscopic study of the tube-casts; and this, in my belief, does furnish an accurate and reliable basis for a medical judgment far superior to any opinion based upon general symptoms only.

So, also, in the late stage of tubal nephritis, the roughened, decayed, or "nibbled" appearance of the casts shows conclusively that the tubes wherein they were formed are undergoing advanced fatty degeneration, and the case must be regarded as utterly hopeless.

Fourth. The prognostic significance of casts depends upon their structure or constitution. It is probable that all except mucous casts are primarily fibrinous; that is, are formed by the union and coagulation of the fibrin-factors. Without stopping to argue this proposition I shall assume it to be true, merely adding that it is an opinion that would not be universally accepted. The contents or structural factors of casts vary greatly, and each different factor, or group of factors, tells its own story.

The hyaline or structureless cast denotes croupous inflammation in the early stage, before degenerative changes have commenced, and, in the absence of other and more portentous casts, warrants a favorable prognosis.

The hyaline blood-cast, or the hyaline cast loaded with blood-globules, denotes a renal hyperemia so intense that some of the delicate renal vessels have been ruptured, and that hemorrhage has occurred. Of course this proves the presence of an acute process, although it may be an acute exacerbation in the course of a chronic lesion. If the former only, a favorable prognosis is warranted; if the latter, the prognosis will, of course, be very grave.

The import of epithelial casts—that is, the hyaline casts loaded with renal epithelia—will depend very much upon the condition of the cells. If they have undergone no essential pathologic change, but are simply exfoliated cells entangled in the cast, a favorable prognosis is warranted on theoretic and practical grounds. Recoveries are by no means uncommon under such circumstances. But if the contained epithelia have undergone, or are in the incipient stage of, fatty degeneration, the prognosis is always grave. In fact, the gravity of the case is in exact proportion to the extent of fatty change shown by the renal epithelium. Of course, I am not now taking into account cardiac or other complications, as it is the purpose of this paper to deal with tube-casts and their relations to prognosis only.

When the tube-casts become granular, or distinctly fatty, the prognosis has at least the positive character of certainty. It is certainly, positively, and unerringly bad. The fatal result may still be

far off—in fact, partial recovery may take place—but it will prove nothing more than a delusive calm, sure to be followed by a fatal outbreak sooner or later.

Fifth. The prognostic significance of tube-casts depends upon their relative numerical proportion. If hyaline and epithelial casts exist together, but with a predominance of hyaline casts, the prognosis is less grave than when epithelial casts predominate. If fatty and epithelial casts exist together, and the former predominate, the case is in more immediate danger than it would be if the conditions were reversed. This rule holds good as regards all other combinations of casts as they appear in clinical experience.

I hold, therefore, that the systematic study of tube-casts furnishes the most satisfactory and reliable groundwork for prognostic conclusions in each and every case of chronic nephritis. I do not undervalue other symptoms or indications; I only claim that the prognostic significance of casts has been greatly undervalued, and I ask for them a proper place in future prognostic calculations.

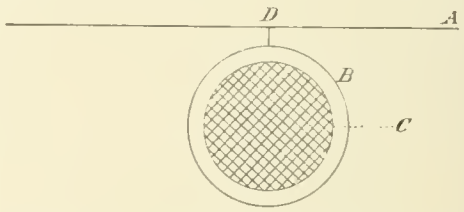
ATHEROMA.

By DOUGLASS W. MONTGOMERY, M.D.,
PROFESSOR OF DISEASES OF THE SKIN, MEDICAL DEPARTMENT OF THE UNIVERSITY OF CALIFORNIA; CONSULTING PHYSICIAN FOR DISEASES OF THE SKIN, AND FOR PATHOLOGY, GERMAN HOSPITAL.

Although operations for the removal of atheromata may be followed by disease of the wound, such as erysipelas, usually the healing takes place so quickly that surgeons have been again and again surprised at the good results. This was especially noteworthy in the old days, when cleanliness was not so customary as at present. But men are still found boasting that they can make large wounds in the scalp without anything serious following, and with remarkably rapid healing; the truth is they have made a mere scratch. It is a good thing to tell of one's happy results, but, in the present case, it would be more to the point if the real reason of the rapid return to the normal were given, instead of attributing it to skill, to the sharpness of the knife, or to the use of any particular form of antiseptic.

The real reason for the rapid healing can easily be seen if the pathologic anatomy of the affection be for a moment thought of. Let the line *A* represent the surface of the skin, the circle *B* stand for the true connective-tissue capsule of the wen, and the circle *C* represent the hard, glazed, horny capsule of epithelium covering the central detritus. It is this inner circle that has given rise to misunderstanding, for men frequently teach that this is the outside connective-tissue covering of the tumor, whereas the real connective-tissue capsule is represented by the outer circle.

The wen must be regarded as a globular cavity of connective tissue, lined with flat, stratified epithelium; it is, in fact, a piece of involuted skin, the connection of which with the outer surface of the body has become obliterated. The epithelium of this piece of skin is being continually thrown off, but instead of being shed, as it is on the outer surface of the body, it is heaped up in the center, and there forms a mass of detritus.



In operating, an incision is made over the most prominent part of the tumor, and an ivory-like, slippery ball is exposed, which readily pops out through the slit. There usually is, as in all scalp-wounds, considerable bleeding.

Now what has the operator done? The slit that he has made in exposing the ivory-like ball is positively the only wound that exists. The sac out of which he has pressed the ball is not a raw surface, but a piece of epithelium dipped down into the skin, and as sound and healthy as the skin on the back of the patient's hand, and ready, like that of the hand, to continue to throw off its epithelium, which, in time, will form a new ball. Those who suppose that the inner surface of this sac is raw will say that it is red and moist, and that surfaces covered with epithelium are neither red nor moist. This surface is, indeed, both red and moist, because it is the rete Malpighii, the covering of the ball being formed by the more completely keratinized cells of the granular and horny layers.

My attention was first called to the anatomy of a wen by examining a section of the wall of one of these glistening balls, and finding it not connective tissue lined internally with epithelial cells, but constituted entirely of epithelium, with some layers of flattened nucleated epithelial cells forming its external covering. That settled its nature, and I saw that an operation, to be radical, must go outside the connective-tissue capsule. But whether or not it is desirable to do this radical operation is another story, for the real connective-tissue capsule is, as Cruveilhier long ago showed,[1] very delicate, and would be very difficult to dissect out. On the other hand, the slow refilling of the sac is a comparatively unimportant matter.

After evacuating the cavity the farce of curetting

[1] Cruveilhier: Traité d'Anatomie Path. gén., tome iii, p. 346. Quoted by Virchow, Die krankhaften Geschwülste, Band i, S. 227.

it or swabbing it out with a caustic solution, is sometimes indulged in. Except in cases in which the horny capsule adheres to its base, curetting does harm by wounding the otherwise intact wall.

The term "atheroma" is to be preferred to that of sebaceous cyst, because the latter term would indicate that all such tumors are retention-cysts of sebaceous glands, and this is not so. Probably the vast majority of these tumors are formed by embryonic displacements of external epithelium. At all events a cavity is formed, lined with epithelium. The word atheroma, meaning literally, *porridge*, and only having reference to the appearance of the central mass of detritus, indicates no theory, and is therefore unobjectionable. The term "wen," the original meaning of which is never taken into account, is possibly even better than atheroma, because it is applied to no other pathologic condition.

The diagnosis of atheroma is usually easy, but sometimes the matter is serious.

In 1888 an interesting case came under the observation of Dr. J. H. Stallard, who removed a growth from the scalp of a woman of fifty-six years of age, which before operating he supposed to be a wen, but which upon incision did not shell out readily as wens usually do. He examined a piece of the tissue and found it was an epithelioma, and a second, more thorough operation was performed two days after the first. About one year afterward an ulcerating surface appeared at the site of the operation, for which the patient practically did nothing up to the time when I first saw her, on January 15, 1890. There was then a large raw surface over the left parietal bone, about three inches long by one inch broad, with an attempt here and there at cicatrization. The edges were high, rounded, smooth, bald elevations of a deep-red color, and very hard—an exaggeration of the comparatively low, rolled edges frequently seen in rodent ulcer. It was easy to imagine how closely the original growth must have simulated an atheroma. A piece of the rolled edge was cut out for examination and found to be an epithelioma in which the epithelial cells were remarkably well preserved.

I saw the case but once, being one of several physicians called to determine positively whether it was carcinoma or not, with the understanding that if found to be carcinomatous it was to be let alone. The patient died about twenty months after this with symptoms indicating implication of the brain.

The Eighth International Congress of Ophthalmology is to be held at Edinburgh during the coming August.

Prausnitz has been made Extraordinary Professor of Hygiene in the University of Gratz.

ORIGINAL ADDRESS.

MEMORIAL ADDRESS IN HONOR OF DR. EPHRAIM McDOWELL.[1]

BY L. S. McMURTRY, M.D.,
OF LOUISVILLE, KY.

AT the last annual meeting of this Association a resolution was adopted establishing the custom of having some Fellow prepare for each annual meeting a memorial address commemorating some deceased eminent Southern surgeon or gynecologist, and appointing for this meeting an address upon Ephraim McDowell. In accordance with its provisions I have the honor to appear before you on this occasion.

It would seem almost a work of supererogation to submit an elaborate biographic sketch of McDowell after the very complete accounts of his life and labors by the late Prof. Samuel D. Gross and the late Dr. John D. Jackson. Yet, I presume that no one will for a moment question the good taste and wisdom of perpetuating in our volumes of *Transactions* the names and deeds of those eminent Southern surgeons who did so much to lay the foundation in America and the whole world for the present splendid system of surgery and gynecology. This galaxy of illustrious names would be incomplete without that of McDowell, the "Father of Ovariotomy" and the pioneer in abdominal surgery.

In 1852, twenty-two years after the death of Ephraim McDowell, Professor Gross, in his celebrated report on Kentucky Surgery to the Kentucky State Medical Society, presented a sketch of the life of this eminent surgeon, with a detailed account of his original surgical work. This sketch was subsequently incorporated in Gross' *American Medical Biography*.[2] In this memoir, Professor Gross formally set forth McDowell's claims as the originator, by successful accomplishment of the radical cure of ovarian tumors by abdominal section. In 1879, at the dedication of the monument erected by the Kentucky State Medical Society over the grave of McDowell at Danville, Kentucky, Professor Gross delivered an elaborate memorial oration, in which he reviewed his former sketch and paid fitting tribute to McDowell's memory, silencing forever the criticisms and claims of certain English surgeons who endeavored to claim for others the honor and credit justly due McDowell. This occasion was made imposing by the Kentucky State Medical Society, and, by the monument erected and the memorial volume published, the name and fame of McDowell were established as the valued and cherished heritage of American surgery. I had the honor on that occasion to introduce Professor Gross (if I may use the word in its restricted sense), and shall never forget the eloquence and enthusiasm of the Nestor of American Surgery as he depicted in thrilling words the achievements of the subject of his oration. Upon the platform were seated the Governor, the Secretary of State, and other dignitaries of the State of Kentucky; the President of the American Medical Association (Dr. Lewis A. Sayre); the venerable Dr. Gilman Kimball, of Lowell, Mass. (who had then performed ovariotomy almost three hun-

[1] Read before the Southern Surgical and Gynecological Association, November, 1893.

[2] Published by Lindsay & Blakiston, of Philadelphia, in 1861.

dred times), and many other distinguished American surgeons, with a large convention of the Kentucky State Medical Society, and an audience of cultivated people. Among the letters read on the occasion, paying tribute to McDowell's worth and fame, were those of Sir Spencer Wells and Mr. Thomas Bryant, of England; Fordyce Barker, T. Gaillard Thomas, Oliver Wendell Holmes, T. G. Richardson, Theophilus Parvin, and other distinguished Americans.

In 1872, the late Dr. John D. Jackson, of Danville, Kentucky, published a biographic sketch[1] of Ephraim McDowell. Dr. Jackson was at that time actively engaged in medical practice in the town in which McDowell had lived and labored, and among his friends and colleagues were those who had known the first ovariotomist personally, as well as a number of his relatives by blood. In Dr. Jackson's sketch he states that he was able, by conversation with numerous contemporaries of McDowell, to verify the statements contained in Dr. Gross' memoir, thus giving additional confirmation to the discriminating observation of Dr. Gross as a biographer. Having been reared and educated in Danville, and having for several years practised medicine there, I can also attest the fidelity and care with which Dr. Jackson traced the personal characteristics and professional work of the subject of this sketch.

Ephraim McDowell was born in Rockbridge County, Va., on the 11th day of March, 1771. His ancestors removed from Scotland to the valley of Virginia in 1737. His mother's maiden name was Sarah McClung, the name indicating that she, too, was of Scotch ancestry. McDowell's father was prominent in political life in Virginia, and a member of the Legislature of that State; in 1772 he came as a land commissioner to Kentucky (which was then a portion of Virginia), and soon afterward removed his family to Danville. He was afterward appointed judge of the District Court of Kentucky. Ephraim McDowell received his early education at a classic seminary at Georgetown, Kentucky, and then went to Staunton, Virginia, to enter the office of Dr. Humphreys, of that place, as a medical student. Of Dr. Humphreys little is known, save that he was a graduate of the University of Edinburgh, and a man of ability. In 1793, McDowell went to Scotland to attend lectures at the University of Edinburgh. At the same time Dr. Samuel Brown, a member of the first corps of lecturers at the Transylvania University at Lexington, Kentucky, and Drs. Hosack and Davidge, of New York, were attending the great Scottish University. Young McDowell remained in Edinburgh during the session of 1793–94, but did not receive the degree of M.D. As far as we know, the degree of M.D. was not conferred upon him until 1823, when, entirely unsolicited on his part, the University of Maryland conferred upon him the honorary degree of M.D. The Medical Society of Philadelphia, at the time the most distinguished of its kind in this country, sent him its diploma in 1807, two years before he performed his first ovariotomy. Thus it will be seen that McDowell had attained national distinction as a surgeon before he undertook the work that has made his name famous.

While in attendance at the University of Edinburgh, McDowell attended the private instructions of John Bell, the most able and eloquent of the Scotch surgeons of his day. That portion of Mr. Bell's course in which he lectured upon the disease of the ovaries and depicted the hopeless fate to which their victims were condemned made a powerful impression upon its auditor. Indeed, McDowell afterward stated that the principles and suggestions at this time enunciated by his master impelled him sixteen years afterward to attempt what was considered an impossibility. In 1795 McDowell returned to his home in Danville, then a small village in the Western wilderness, and entered upon the practice of his profession. Being a man of classic education, coming from the most famous medical school of the world, he soon easily assumed the first professional position in his locality, and within a few years he became known throughout all the Western and Southern States as the first surgeon of this entire part of the country. Indeed, until Dr. Benjamin W. Dudley, of Lexington, Ky., came upon the field, McDowell stood without one to dispute his position as the most eminent surgeon west of the Alleghenies. During this time his practice extended in every direction, persons coming to him from all the neighboring States; he frequently made long journeys on horseback to operate upon persons whose condition would not permit them to visit him at his home. So far as is known, he was in the habit of performing every surgical operation then practised. In lithotomy he was especially successful, and, up to 1828, was known to have operated twenty-two times without a single death. He operated many times for strangulated hernia, and did successfully various amputations and other operations, including tracheotomy.

In 1809, fourteen years after he had begun the practice of his profession, he was sent for to see Mrs. Crawford, residing in Greene County, Kentucky, some sixty miles from Danville. McDowell found her to be the subject of an ovarian tumor, which was rapidly growing and hastening to a fatal termination. In the language of Gross: "After a most thorough and critical examination, Dr. McDowell informed his patient, a woman of unusual courage and strength of mind, that the only chance for relief was the excision of the diseased mass. He explained to her, with great clearness and fidelity, the nature and hazard of the operation; he told her that he had never performed it, but that he was ready, if she were willing, to undertake it, and risk his reputation upon the issue, adding that it was an experiment, but an experiment well worthy of trial." At the close of the interview Mrs. Crawford declared that any mode of death, suicide excepted, was preferable to the slow death which she was undergoing and that she would submit to any operation which held out even a remote prospect of relief. Mrs. Crawford was forty-seven at the time of the operation, and died on the 30th of March, 1841, aged seventy-eight years. It was not until seven years afterward, and when he had twice repeated the operation, that McDowell published any account of it. In 1861 he prepared a brief account of his first three cases, a copy of which he forwarded to his old preceptor, John Bell, who was then travelling on the Continent for his health, and had left his professional correspondence in charge of Mr. John Lizars. The communication failed to reach Mr. Bell, and another copy was forwarded by McDowell

[1] In Gaillard's Medical Journal.

to Philadelphia for publication. The report appeared in the *Eclectic Repertory and Analytical Review* for October, 1816. It reads as follows:

"In December, 1809, I was called to see a Mrs. Crawford, who had for several months thought herself pregnant. She was affected with pain similar to labor-pains, for which she could find no relief. So strong was the presumption of her being in the last stage of pregnancy, that two physicians who were consulted in her case requested my aid in delivering her. The abdomen was considerably enlarged, and had the appearance of pregnancy, though the inclination of the tumor was to one side, admitting of an easy removal to the other. Upon examination, *per vaginam*, I found nothing in the uterus which induced the conclusion that it must be an enlarged ovarium. Having never seen so large a substance extracted, nor heard of an attempt or success attending any operation such as this required, I gave to the unhappy woman information of her dangerous situation. She appeared willing to undergo the experiment, which I promised to perform, if she would come to Danville (the town where I lived), a distance of sixty miles from her place of residence. This appeared almost impracticable by any, though the most favorable, conveyance, though she performed the journey in a few days on horseback. With the assistance of my nephew and colleague, James McDowell, M.D., I commenced the operation, which was concluded as follows: Having placed her on a table of the ordinary height, on her back, and removed all her dressing which might in any way impede the operation, I made an incision about three inches long, from the musculus rectus abdominis, on the left side, continuing the same nine inches in length, parallel with the fibers of the above-named muscle, extending into the cavity of the abdomen, the parietes of which were a good deal contused, which we ascribed to the resting of the tumor on the horn of the saddle during the journey. The tumor then appeared full in view, but was so large that we could not take it away entire. We put a strong ligature around the Fallopian tube near to the uterus; we then cut open the tumor, which was the ovarium and the fimbriated part of the Fallopian tube very much enlarged. We took out fifteen pounds of a dirty, gelatinous-looking substance; after which we cut through the Fallopian tube and extracted the sac, which weighed seven pounds and a half. As soon as the external opening was made, the intestines rushed out upon the table, and so completely was the abdomen filled with the tumor that they could not be replaced during the operation, which was terminated in about twenty-five minutes. We then turned her upon her left side, so as to permit the blood to escape, after which we closed the external opening with the interrupted suture, leaving out at the lower end of the incision the ligature which surrounded the Fallopian tube. Between every two stitches we put a strip of adhesive plaster, which, by keeping the parts in contact, hastened the healing of the incision. We then applied the usual dressing, put her to bed, and prescribed a strict observance of the antiphlogistic regimen. In five days I visited her, and much to my astonishment found her engaged in making up her bed. I gave her particular caution for the future, and in twenty-five days she returned home, as she came, in good health, which she continues to enjoy."

Two additional cases completed this report, all three patients making complete and prompt recovery.

Three years later (October, 1819) McDowell reported in the same journal two additional cases. It will be observed that seven years elapsed from the time he first operated until he made his publication, when he was enabled to add two more successful cases. That so long a time should have been allowed to elapse was most probably due to the surgeon's natural aversion to writing. He was fond of the active duties of his profession and possessed a natural antipathy for literary work. Such men we all know nowadays in the profession, and we must remember that the telegraph, medical societies, and weekly medical journals were not at his command. The communication announcing the successful undertaking covered less than three octavo pages of printed matter, and bore the evidence of careless composition, but all the essential points were given succinctly. If such operations had been performed in our day the most minute circumstances would have been described in detail. McDowell lacked that grace of diction and power of description necessary for such work. Dr. Gross says that writing was a great bore to him, and that he was almost a stranger to the pen and never had any fancy for its use. Perhaps the manner in which this report was made did much to provoke the criticism with which it was received. Dr. James Johnson, the very learned editor of the London *Medico-Chirurgical Review*, was especially severe and satirical in his criticisms. In 1827, when McDowell's work was confirmed by other persons and by additional cases, Dr. Johnson said: "There were circumstances in the narrative of some of the first cases that raised misgivings in our minds, for which uncharitableness we ask pardon of God and of Dr. Ephraim McDowell, of Danville."

Just here it will be interesting to note some points in McDowell's operative technique. The operation, of course, was executed without an anesthetic. The incision was made to the left of the median line, about three inches external to the rectus muscle, and was nine inches in length. After opening the peritoneum he first tied the pedicle with a strong ligature, and then cut open the tumor and removed its contents. He then divided the pedicle, it having been previously tied, and removed the sac. As soon as the incision was made into the abdomen, he states, the intestines rushed out upon the table, and were not replaced until the operation was completed, which, he adds, "occupied twenty-five minutes." He then turned the patient upon the left side to allow all fluids to escape. He closed the incision with interrupted sutures and brought out the ligature attached to the pedicle at the lower angle of the incision. In reporting his cases he omits mention of the material composing the ligature, and I have been informed by a personal friend of McDowell's, now dead, who was a great deal about McDowell's office in his boyhood, that the ligatures used were made of shoemaker's thread and waxed thoroughly before being used. Adhesive strips and a bandage completed the dressing, and, in the author's language, he prescribed "a strict observation of the antiphlogistic regimen."

The special features of the technique are: (1) The incision was made through the muscular layer of the abdominal wall three inches external to the rectus muscle; (2) the cyst was not evacuated until after the pedicle was tied; (3) an effort was made to cleanse the peritoneum of fluids; (4) drainage was sought, as well as escape of ligatures, by bringing the ligatures out at the lower angle of the incision; (5) the operation occupied only twenty-five minutes, expedition being more the result, doubtless, of the want of an anesthetic than

otherwise. In his report of his second case he uses this language: "I laid her side open." In his third case, however, he adopted the median incision, saying in his report of this case, "I changed my place of opening to the linea alba." In all of his cases he ligated the pedicle before separating adhesions or tapping the tumor. In his third case he mentions that the ligatures could not be released for five weeks, at the end of which time the cord was taken away.

In his second report, in 1819, in which he relates two additional cases, he incidentally alluded to his critics and their criticisms in these words:

"I thought my statement sufficiently explicit to warrant any surgeon's performing the operation when necessary without hazarding the odium of making an experiment, and I think my description of the mode of operating, and of the anatomy of the parts concerned, clear enough to enable any good anatomist, possessing the judgment requisite for a surgeon, to operate with safety. I hope no operator of any other description may ever attempt it. It is my most ardent wish that this operation may remain to the mechanical surgeon forever incomprehensible."

If we knew nothing else of McDowell's mental cast and surgical ability these lines would stamp him as a surgeon of broad and elevated views, with a high conception of the science and art of surgery, a keen appreciation of its progressive spirit, and that he knew of the advanced ground upon which he trod.

How many times during his career he performed ovariotomy is not now certainly known. Dr. Jackson states that in 1822 he made a long horseback journey of some hundreds of miles into middle Tennessee, and performed ovariotomy with success upon Mrs. Overton, who resided near the Hermitage, the residence of President Jackson. The only assistants he had in the operation, Dr. Jackson states, were General Jackson and a Mrs. Priestly. General Jackson seems to have been greatly pleased with McDowell, and had him go to his house for entertainment. His nephew, Dr. William A. McDowell, who for five years was his pupil and for two years his partner, tells us that up to 1820 his uncle had done seven ovariotomies, six of which he witnessed, and that six of the seven were successful. Dr. Alban G. Smith succeeded Dr. William A. McDowell as partner of Dr. Ephraim McDowell, and while with him Dr. Smith himself twice performed ovariotomy. The younger McDowell stated later that he knew of his uncle having during his career operated thirteen times, exclusive of the two cases Dr. Smith operated upon; of the thirteen, eight recovered.

McDowell first operated in 1809; in July, 1821, Dr. Nathan Smith, Professor of Surgery in Yale College, performed ovariotomy at Norwich, Conn. Dr. Smith had never heard of McDowell's work and operated in an entirely original way. The incision was made in the median line, and was three inches in length. Dr. Smith states that he waited until the blood ceased flowing before he opened the peritoneum. The omentum being adherent, he tied it away with ligatures made from a kid glove. The pedicle was also tied with the same material, the ligature cut short, the pedicle dropped, and the incision closed. The patient made an uninterrupted recovery. Dr. Alban G. Smith, previously mentioned, reported his first operation, of date of May 23, 1823, in the *North American Medical and Surgical Journal* for January, 1826. He states that he administered a decoction of senna to the patient the night after the operation, producing free catharsis the next day and the day following. Peaslee alludes to this to illustrate the crude methods of the early ovariotomist, while we of the present day recognize Dr. Smith as having been in advance of his times. In 1829 Rogers, of New York, operated successfully, adopting the method of treating the pedicle which Nathan Smith had practised. Bellinger, of Charleston, S. C., operated successfully in 1835, tying the pedicle after Nathan Smith's method. McDowell died in 1830, and from 1835 until 1843 there were absolutely no cases of ovariotomy in this country, according to the searching records of Peaslee and others. In 1843 the late Dr. John L. Atlee, of Lancaster, Pa., and Dr. Alexander Dunlap, of Springfield, Ohio, began their work, joined by Dr. Washington L. Atlee, of Philadelphia, the following year, thus reviving the operation in America. Of these great pioneers in abdominal surgery Alexander Dunlap still survives.

There would be comparatively little credit due McDowell had he without just conception of the nature and character of the undertaking, its difficulties and its dangers, cut into an ovarian tumor, thinking it, perhaps, an abscess or serous accumulation; but educated as he was in the most famous and advanced medical school in the world, experienced in all branches of operative surgery, he had a thorough conception of the nature of the tumor, and deliberately conceived and successfully executed a complete operative procedure previously unattempted in the civilized world. In Great Britain Dr. Robert Houston had, in 1701, laid open an ovarian tumor and evacuated its contents, but he made no attempt to remove the sac. A similar operation had been done by L'Aumonier, but the failure of these eminent surgeons would tend to deter one from rather than to encourage the undertaking. When we think of one living on the border of Western civilization, in a little town of five hundred inhabitants; far removed from the opportunity of consultation with anyone whose opinion might be of value, and nearly a thousand miles from the nearest hospital or dissecting-room; performing a new and untried operation of such magnitude upon the living; before the days of anesthesia; with a full sense of the responsibility and danger; without skilled assistants—our admiration for McDowell's courage and skill rises to its full height, and we feel that he was indeed a man of original ability, clear head, skilled hand, and stout heart.

Dr. Jackson, who conversed with many reliable persons personally acquainted with McDowell, gives this description of his personality: "Dr. McDowell, in person, was nearly six feet in height, of commanding carriage, of a rather florid complexion, with black eyes and dark hair, and deemed in youth quite handsome. He was always remarkable for his strength and agility, and while at Edinburgh was pronounced the swiftest footracer of the whole University. He was one of the kindest-hearted and most amiable of men, overflowing with cheerfulness and good humor, and readily approachable. He seemed to be totally devoid of all reserve and austerity, a tinge of which is generally characteristic of the scholar and professional man, and never appeared

to assume that there was any difference between the plane of his vocation and that of the humblest unlettered artisan.

"He possessed an excellent medical library for his day and locality, and was in the habit of purchasing most of the principal new works on medicine. While having a fair knowledge of the classics, yet most of his professional leisure he gave to history and belles-lettres. Burns was an especial favorite with him, and from his familiarity with the Scottish dialect, acquired while in Edinburgh, his readings and quotations were given with the idiom as perfect as if he had been a native of Auld Reekie.

"As a citizen he was charitable and public-spirited, favoring and contributing, by his means, to most of the enterprises which promised good to the community in which he resided. He was an especial friend to the Center College of Kentucky, coöperating largely by his influence and money toward its foundation, and was, indeed, one of its original corporators and curators. This, too, although its government was by the Presbyterian Church, while he himself was in religion an Episcopalian. The site of the present Episcopalian edifice in Danville, Trinity Church, was a contribution from Dr. McDowell."

All who knew him were impressed with the elegance of his personal appearance, especially with the neatness of his dress and his personal cleanliness.

At the age of thirty-one Dr. McDowell married Sarah, the daughter of Kentucky's famous "war governor," Isaac Shelby, with whom he lived happily and raised a family of six children, two sons and four daughters, only three of whom survive him. Mrs. McDowell was his survivor by ten years. In the later years of his life he removed from the village to a country home, where he spent the later years of his life, still continuing his professional work. He died on the 20th day of June, 1830, after a brief illness.

In affairs relating to human progress and discoveries history repeats itself. The discovery of the circulation of the blood, one of the most brilliant achievements of the seventeenth century, it is said was not accepted by a single one of Harvey's contemporaries over forty years of age. Many years elapsed before the efficacy of vaccination was fully accepted after Jenner's demonstration of its protective power. All great discoveries in science have been destined to be received with doubt, prejudice, and opposition. It was not allowed to McDowell to see the fruits of his immortal work beyond the limits of his own country. As I have stated, Prof. Nathan Smith, the second ovariotomist, had never heard of McDowell's successful work when he undertook the solution of the same problem. When McDowell died, his operation could scarcely be said to have gained a foothold, and after his death it was abandoned until the Atlees and Dunlap revived the operation. In England, Charles Clay did his first operation in 1842. Mr. Spencer Wells began to operate in 1858. The growth and development of the operation up to the present time, when it has become the most successful major operation known to surgery, are familiar to all. That the work of McDowell, published to the world in 1816, opened the way and established the feasibility and practicability of the operation no one pretends to deny. One remarkable circumstance connected with the operation is that it originated and was most practised in the country, while the eminent teachers of surgery in the great cities as a rule refused to accept it and positively opposed it long after it was established in practice. At so late a period as when Dr. Washington L. Atlee lived and practised in Philadelphia, he was refused professional recognition by many eminent surgeons of that city, and was often denounced as a murderer. Another circumstance connected with the birth and growth of ovariotomy, which cannot but impress the student of its history, is that this branch of surgery has been advanced by the labors of a few men. The fate of this operation was for a long time centered in the personality of a few courageous individuals. The high position it has attained is due to the fact that its recorded results are made by a comparatively few operators.

It is beyond the scope of this address to discuss the brilliant achievements of modern surgery in extending the field of abdominal and pelvic surgery. Every important organ within the abdomen has been brought within the surgeon's province until this department of surgery has become the crowning glory of our art. The foundation and history began with ovariotomy; ovariotomy began with McDowell. Careful reflection upon the operative methods of the "Father of Ovariotomy," as I have endeavored to portray them by quoting from his own description, will demonstrate that, except as to asepsis, but little improvement has been made over his methods as originally conceived and carried out. The introduction of the clamp, as practised so long by Sir Spencer Wells, we now know to have been a backward step, which for many years delayed the progress of ovariotomy and prevented an extension of the field of abdominal surgery. With a return to the dropped pedicle as ligated by McDowell, with the simple modification of ligatures cut short, the operation at once under antiseptic precautions reached its present position.

CLINICAL MEMORANDUM.

THE ADMINISTRATION OF A GLYCERIN SOLUTION OF MERCURIC CHLORID AS A PROPHYLACTIC MEASURE AGAINST DIPHTHERIA.

BY WILLIAM C. DABNEY, M.D.,
PROFESSOR OF MEDICINE, UNIVERSITY OF VIRGINIA.

IT seems to be a generally accepted opinion now that the Krebs-Löffler bacilli attack the pharynx, as a rule, first, and that the constitutional symptoms of diphtheria result from the absorption of toxins generated by these germs. If this view be correct, it is evident that the destruction of the pathogenic germs in the pharynx before they have time to generate toxic substances will materially assist in preventing an attack in the case of children who are exposed to the disease. Various methods of applying germicidal agents to the pharynx have been proposed, but the one which I am in the habit of using does not seem to have been employed as yet, so far as I can learn, and it is, I think, well worthy of a trial, because of its simplicity and the facility with which it can be employed.

It consists in administering to the persons who have

been exposed a solution of mercuric chlorid in glycerin. The corrosive sublimate is, of course, the germicidal agent; the glycerin is used as a vehicle because it sticks to the throat, and thus keeps the germicide in contact with the mucous membrane.

I usually give from $\frac{1}{96}$ to $\frac{1}{60}$ of a grain of the bichlorid in a teaspoonful of glycerin every three hours. I direct that the child shall not be allowed to swallow anything else for at least half an hour afterward.

No water is added to the glycerin solution of mercury.

For some time I was in the habit of adding muriated tincture of iron to the mercury and glycerin, but when this is done it necessitates the dilution of the mixture with water, and the *local* action of the drugs is, of course, diminished, so that when used as a *prophylactic* measure I have recently omitted the iron.

In cases of developed diphtheria I have for years used a spray of hydrogen dioxid—one part to four of water—and followed this by the administration of a solution of mercuric chlorid and muriated tincture of iron in glycerin. Perhaps it would be better to give the bichlorid and iron separately, because the former could be given in glycerin without the addition of water, and would thus be kept longer in contact with the pharyngeal mucous membrane.

TERATOLOGIC NOTE.

TWO RECENT ADDITIONS TO THE TERATOLOGIC COLLECTION IN THE WISTAR AND HORNER MUSEUM OF THE UNIVERSITY OF PENNSYLVANIA: SPECIMENS OF ACEPHALUS AND OF MICROMELUS.

BY BARTON COOKE HIRST, M.D.,
PROFESSOR OF OBSTETRICS, UNIVERSITY OF PENNSYLVANIA.

THERE is in the Wistar and Horner Medical Museum of the University of Pennsylvania the best teratologic collection in America. It has grown rapidly of late by gifts from different parts of the United States and from points as distant as the West Indies. If members of the profession continue to contribute as generously as they have, we shall soon have one of the finest collections in the world. A single specimen in the possession of an individual is of little value; but added to a large collection it is itself increased in value, while it enhances the value of the whole collection.

Acephalus. This specimen, kindly presented to me by Dr. Ingalls, of Hartford, Conn., is an example of the commonest form of acardiac acephali. The lower trunk and limbs are comparatively well developed. The thorax, upper extremities, neck, and head are apparently wanting, but rudiments of all these parts may usually be found by a careful dissection. It is very exceptional to find, as in this case, a well-developed hand attached to the upper portion of the trunk without any other part, to all external appearances, of an upper extremity. It is much more common to find an arm represented by an ill-developed stump.

In all the museums of London combined there are but ten *acardiaci*. In our collection there are five.

Rachitis congenita micromelica. In Fig. No. 2 is seen

FIG. 1.

Acephalus.

a typical representation of this rare deformity and congenital disease, rare at least in this country. There is

FIG. 2.

Rachitis congenita micromelica.

hydrocephalus; the limbs are short, curved, and thick, but nowhere fractured. The pelvis has the typical rachitic form—prominent promontory, curved sacrum, widely separated iliac spines, and ischial tuberosities, the result here, of course, of a pull upon the pelvic bones by the muscles attached to them. Nothing is known about the etiology of fetal rachitis. No cause at all could be assigned for it in this case. The student interested in the subject is referred to the excellent article by Winkler in the *Archiv für Gynäkologie*, 1871, and to the bibliography in Müller's *Handbuch der Geburtshülfe*, Bd. ii, p. 807.

1821 Spruce Street.

MEDICAL PROGRESS.

The Results and the Treatment of Wounds of the Common Femoral Vein at Poupart's Ligament.—Niebergall (*Deutsche Zeitschrift f. Chirurgie*, B. xxxvii, H. 3, 4, p. 268) has arrived at some interesting conclusions as the result of a careful study of the results and the treatment of injuries of the common femoral vein at Poupart's ligament. He assents to the view that, as a rule, by reason of the presence of valves in the veins, there is no venous circulation in the lower extremity except through the common femoral vein; but he does not consider as justified the inference that sudden occlusion of the femoral vein at Poupart's ligament must, by reason of the resulting stasis, lead to gangrene of the lower extremity, and that in case of injury of the vein in this situation relief is to be afforded by immediate ligation of the artery. It has been shown that after ligation of the femoral vein, but moderate arterial pressure suffices to overcome the action of the valves in the venous anastomoses, and thus establish a collateral circulation. As the pressure necessary to establish the collateral circulation during life depends upon the energy of the current in the artery, the lumen of this vessel is to be left free. The evidences of stasis (cyanosis, edema) that appear after ligation of the femoral vein, without interference with the artery, result from the elevation of the pressure in the venous system to that present in the arterial system, and represent Nature's method and means of adjustment. These threatening manifestations disappear with a readiness corresponding to that with which the collateral circulation is established. In some cases they have persisted for but a few hours. Among twenty-five cases in which ligation of the femoral vein was practised by reason of the accidental or involuntary injury or unavoidable division in connection with the extirpation of neoplasms, gangrene did not follow in any. The circulatory disturbances that follow ligation of the femoral vein for sudden traumatisms differ only in degree from the disturbances that take place after ligation of the vein for injuries in the course of neoplasm-extirpation. Among ten such cases death followed in but one, and in this the fatal result may have been due to other conditions. The simultaneous ligation of the femoral artery and vein for injury of the vein alone, or of both artery and vein in the course of neoplasm-extirpation, or for trauma of the vein alone, or both artery and vein, is attended with an unfavorable (under the conditions first stated gangrene occurred in 62.5 per cent. of the cases, under the conditions second named in 50 per cent.), though not necessarily fatal prognosis. There is, therefore, no indication for primary amputation. The results of the application of the ligature are first to be awaited, and secondary amputation undertaken only when gangrene sets in. The explanation of these unfavorable results is to be found in the ligation of the artery, in consequence of which the force necessary to equalize the pressure in artery and vein is eliminated. An adjuvant to the development of gangrene of the extremity, after ligation of the artery, is to be found in the resulting local anemia, particularly in the peripheral parts, which in turn may lead to anemic necrosis (particularly after antecedent hemorrhage, cardiac weakness, or arterio-sclerosis). An additional cause for gangrene resides in the hemorrhagic infiltration of the tissues and the sheaths of the vessels. As a result of the increased pressure, the entrance of blood into the collateral circulation is obstructed and the venous return is made more difficult; at the same time the living wall takes up fibrin-ferment from the extravasation, thus favoring coagulation of the blood within the vessels. This influence is particularly noticeable in the thin-walled veins, with their slow blood-current, in which extensive thrombosis forms as soon as the opportunity for resorption of the fibrin-ferment arises. The grounds upon which the recommendation for ligation of the femoral artery and vein for injury of the vein was based (control of hemorrhage, regulation of the circulatory conditions) are insufficient, inasmuch as ligation of the artery often fails to control hemorrhage from the vein; besides, the occasion for a regulation of the circulatory conditions disappears when, as usually happens, the vein is simultaneously ligated. In addition, the resistance of the valves in the collateral venous branches is too great to be overcome by the feeble arterial current. While it is possible thus, by permitting the lumen of the femoral artery to remain free, and avoiding infiltration of blood and its consequences, to ligate the femoral vein without danger of gangrene of the extremity, even after antecedent trauma, there remains a group of cases (antecedent hemorrhage, disease of the walls of the artery), providing the condition of the walls of the vein is beyond suspicion, in which partial lateral ligation of the vein would seem preferable; also in case of small wounds of the vein, thus permitting the current of blood through the vessel to be maintained. Under such circumstances compression, antiseptic tamponade, would be applicable under peculiarly favorable conditions, such as a small wound of the vein and soft parts in case of accidental trauma. The possibility of the occurrence of secondary hemorrhage as a result of slipping of the ligature must be borne in mind after lateral ligation. The most secure and most serviceable means of ligature are lateral suture of the vein and the application of forceps for a period of twenty-four hours. The question of total or partial ligature will be decided by the nature of the wound in the vessel, and the character of the injury. Malignant neoplasms, involving the walls of the vein so as to prevent its isolation, indicate resection of the vessel with circular ligature; the same procedure will be required if the injury of the vein involves the greater part of the circumference of the vessel, or if the posterior wall of the vein is also involved. At least two ligatures will be required,

one peripheral, the other central; a third ligature will be required when the mouth of the vena profunda lies between the other two ligatures. The ligatures are to be applied as closely above and below the seat of injury as possible without incurring any risk of their slipping. If the wound in the vein is small, if it elongate longitudinally, and if it involve an otherwise healthy vessel, lateral ligation is indicated. Tamponade may be tried, but is to be discarded if it does not succeed upon the first trial. In case of slight injuries in the course of neoplasm-extirpation, when the conditions are exposed to view, dependence will not be placed upon tamponade. In case of antecedent trauma (puncture), enlargement of the external wound will usually be necessary to determine the nature of the injury. The ligation of the femoral artery for the control of hemorrhage from the femoral vein or from lateral branches of the femoral vein must be considered a mistake under all conditions, and not permissible. If both artery and vein are injured, or if both must be resected in the removal of new-growths, gangrene is to be expected. The operation is to be followed by scrupulous removal of all extravasated blood, and by vertical suspension or elevation of the lower extremity. All recommendations calculated, in view of the supposed dangers of venous stasis, to lower the arterial pressure (immediate compression of the artery after ligation of the vein, ligation of the superficial femoral artery) are to be rejected as contra-indicated and injurious.

Tuberculosis of the Penis.—Malécot (*Annales des Malad. des Organes Génito-urinaires*, 1893, No. 11, p. 838) has reported an instance of tuberculosis of the penis—a rare localization. The case occurred in a boy, fourteen years old, on whom the rite of circumcision had been practised a week after birth, and who for three years had complained of irritability of the bladder. Micturition was frequent and painful, and the urine was often mixed with blood. For about eighteen months there had been both diurnal and nocturnal incontinence of urine. The lad appeared pallid and emaciated, but no pulmonary lesion was detectable. The ulceration involved the extremity of the glans penis, and occupied an area about the size of a silver quarter-dollar, having the meatus urinarius as its center. The borders of the ulcer were a little irregular, but not undermined, and were discolored, presenting here and there slight prominences. The base was pale, smooth, and presented a few vessels about the meatus, which appeared somewhat retracted. Although the ulcer was constantly soiled by urine it presented no drop of pus. It was soft and free from pain, even on pressure, and there was no involvement of the inguinal glands. Direct examination of scrapings from the surface of the ulcer failed to disclose the presence of tubercle-bacilli, but inoculation-experiments demonstrated the correctness of the clinical diagnosis of tuberculous ulceration.

Akromegaly in Father and Son.—Bonardi (*Arch. Ital. di Clin. Med., 1893; Rev. des Sci. Méd.*, No. 85) has recorded the case of a man, seventy-four years old, whose father had been affected with akromegaly, and who for a long time presented increased size of the head, elongation of the face, enlargement of the tongue, hypertrophy of the hands and feet, and dorsal kyphosis. After death a tumor of the pituitary body was found, in conjunction with generalized endartertis and sclerotic atrophy of the thyroid gland.

THERAPEUTIC NOTES.

Potassium Permanganate as an Antidote to Opium and its Alkaloids.—It is related that a physician of New York recently demonstrated, in the presence of a number of colleagues, in his own person the efficacy of potassium permanganate as an antidote to morphin. He is said to have swallowed three grains of morphin sulfate in solution, and immediately afterward four grains of potassium permanganate dissolved in four ounces of water, without the development of the usual effects of morphin. It is maintained that morphin, or any of the salts of opium, is immediately rendered inert by contact with potassium permanganate, the one drug seeming to have a special affinity for the other, the one being a reducing agent, the other an oxidizing agent. As the antidotal action is chemic rather than physiologic, it is essential that the permanganate be administered soon after the ingestion of the opiate. It was first believed that the permanganate is without influence after the opiate has been absorbed, but experiments upon animals seem to indicate that if the former is introduced into the veins at not too great an interval after the ingestion or injection of the latter an antidotal influence is also exercised.

Internal Remedies for Vesicular Eczema.—Phillips (*British Medical Journal*, No. 1726, p. 175) details the results of a study of the effects obtained from the internal administration of various remedies in the treatment of vesicular eczema. Calcium sulfid was used in a large number of cases, but with disappointing results. Ichthyol, in pill-form, seemed to have a slight modifying influence in some cases; in one case of relapsing vesicular eczema of the arms and hands the patient believed that the drug was of more benefit than any previously used remedy. Calcium chlorid was used in a large number of cases, but with entirely negative results. Antimonium and potassium tartrate, in doses of from one-tenth to one-sixth of a grain thrice daily, continued for long periods, seemed to be helpful in a small proportion of cases. The results from thyroid feeding were negative. The hypophosfites appeared to be occasionally useful.

Thyroid Extract in the Treatment of Syphilitic Psoriasis.—Gordon (*British Medical Journal*, No. 1726, p. 186), has reported the case of a woman, forty-nine years old, who presented palmar and plantar psoriasis, together with other manifestations of syphilis, in the course of which potassic iodid, and arsenic and chrysophanic acid had been employed, with but little improvement. It was resolved to give thyroid extract a trial. All treatment was withheld for a week. At the end of this time 20 minims of a glycerin extract of thyroid gland were prescribed daily. Marked improvement shortly set in, which proved persistent. Subsequently, treatment with iodid was resumed.

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ENGLISH AND GERMAN VIEWS OF GOUT.

ANYONE who has read the careful collective review of the newer literature on gout by PROF. C. VON NOORDEN, which recently appeared in the *Berliner klinische Wochenschrift*,[1] will have been struck by the comparison of the work done in England with that coming from Germany. The English, with an abundance of clinical material, have given us by far the best account of the symptomatology and general course of the disease, while the Germans, with their tendency for research and their excellent laboratory equipment, have contributed to the chemic rather than to the clinical side of the process—a side which has in England, if we except the work of one or two men, remained in the condition in which it was left fifty years ago.

SIR DYCE DUCKWORTH in a comprehensive work[2] has included, along with his own observations, the views of his fellow-countrymen upon the variations in the clinical picture which the disease may present, and has outlined the treatment clearly and with calm judgment. In his comments on the pathogenesis and theory as to the essential nature of the disease, however, we find little else than hypotheses built upon the chemistry of GARROD. He has referred, it is true, to the work of HAIG, the main points of which have been embodied in a book written by the latter entitled *Uric Acid*.[1] According to HAIG there is no increased formation of uric acid in gout, but the blood being less alkaline than normal is unable to hold uric acid (or its salts) in solution. The kidneys cannot remove these constituents sufficiently rapidly when the alkalinity of the blood is lowered, and they are consequently deposited in the tissues and joints, where the lymph-stream is slow and of low alkalinity. It will be noted that HAIG'S theory agrees with GARROD'S in so far as it regards gout as dependent essentially upon an excess of uric acid and its salts within the body; the distinction between the two is simply that GARROD attributed the accumulation to renal insufficiency, while HAIG lays the fault to an alteration in the composition of the blood. The idea so often met with in English literature, that acute articular rheumatism and gout are only different manifestations of one and the same disease, is no less astonishing to the German than it is to the American mind.

SIR WILLIAM ROBERTS[2] has broken loose from the traditional views, and has set up a new theory based upon personal physiologic and chemic investigations. His ideas have been clearly expressed in the Croonian lectures for 1892, and are already so well known that we shall not enter fully into them here. It will be sufficient to recall the main points: In the healthy body uric acid and neutral and acid urates play no important part in metabolism. It is an easily soluble "quadriurate" that is formed in the tissues, that circulates in the blood, and is excreted by the kidneys. If there be over-production or deficient elimination from any cause, this quadriurate is transformed, through the influence of the alkali of the blood, into the difficultly soluble "biurate." This latter, existing at first in a gelatinous form, is easily changed into a less soluble anhydrid, to be finally deposited in crystalline form in certain parts of the body, where the temperature is low (*e. g.*, in the peripheral joints), and particularly where the lymph contains a relatively high

[1] C. v. Noorden: "Neue Arbeiten über Gicht," Berl. klin. Wochenschr., 1893, p. 1221.

[2] Sir Dyce Duckworth: A Treatise on Gout, London, 1892.

[1] A. Haig: Uric Acid as a Factor in the Causation of Disease, London, 1892.

[2] Sir W. Roberts: "The Chemistry and Therapeutics of Uric Acid, Gravel, and Gout," Brit. Med. Journ., 1892, i, 1235, 1347: ii, 6, 61.

percentage of sodium chlorid (*e. g.*, synovial fluid). These salts when once deposited can only with great difficulty be redissolved.

An attempt has been made in a recent valuable monograph by LEVISON[1] to explain all the known facts of gout by means of the "quadriurate" theory, HARBACZEWSKI'S doctrine, that the uric acid originates from nuclein, completely independently of the formation of urea in the body, being accepted at the same time in its entirety. LEVISON comes back, however, in concluding, to the older idea of GARROD, that gout depends on a retention of uric acid as a result of renal insufficieny, and points out that heredity, immoderate alcoholic indulgence and excesses in nitrogenous food are factors common alike in the etiology of both gout and contracted kidney.

Among the German contributions none has attracted more attention, perhaps, than that of E. PFEIFFER.[2] It may be remembered that PFEIFFER determined that in his patients who suffered from acute attacks of gout, but showed no chronic alterations (*e. g.*, tophi), there was, as a rule, less uric acid excreted than in health, while in patients with chronic changes the amount of uric acid in the urine was normal or a little increased. If the uratic deposits in the tissues in the latter case be considered, the total formation of uric acid is found to be abnormally great. In both classes of cases the amount of urea excreted daily is below the normal, and PFEIFFER lays stress on his view that in the gouty patient, even before any permanent alteration has taken place in the tissues, a perversion of the total metabolism can be demonstrated. More numerous and more extensive investigations of the total metabolism, as VON NOORDEN points out, must be made before such conclusions can be regarded as safe.

It has further been shown by PFEIFFER, that by passing 100 c.cm. of the day's urine through a filter charged with from 0.2 to 0.5 gr. of pure uric acid, there is less uric acid (precipitable by hydrochloric acid) in the filtrate than in the unfiltered urine. The difference is represented by what he calls "easily separable" or "free" uric acid (*leicht ausscheidbare oder freie Harnsäure*). Applying this test to gouty urine he found (1) that during and just after an acute attack there is none or almost none of this "easily separable" uric acid present, and (2) that in the intervals between the attacks and in chronic gout, nearly all of the uric acid of the urine (precipitable by HCl) is of this "easily separable" variety. It is to be noted that healthy urine loses by filtration through 0.2 gr. of uric acid rarely more than 35 per cent. of the amount which can be precipitated by hydrochloric acid.

No sooner a new fact than a new theory, and PFEIFFER assumes that the blood, like the urine, in gout, holds its uric acid in "more easily separable" combinations than in health, and thus the deposits in the tissues are easily to be accounted for. The acute attacks result from the local irritating effects of a sudden solution of the tissue-deposits, consequent on an increase in the alkalinity of the blood or lymph; "firmer" (*gebundenen*) combinations of uric acid then circulate in the blood and are given off in the urine.

These observations have been confirmed by CAMERER, SCHETELIG, and MORDHORST; and LEUBE has gone so far as to state in his text-book that they are of great importance for diagnostic purposes, even though the cause of this peculiar behavior of the uric acid in gouty urine is as yet not clear. Were these phemonena constant for gout, and did they never occur in other diseases, a diagnostic gain would certainly have to be admitted, for it is exactly in the intervals between the attacks that the diagnosis is most difficult, and here, according to PFEIFFER, the urine is most abnormal. But FELIZIANI, as well as ROBERTS, contradicts these statements of PFEIFFER, and more, even should his findings in gouty urine prove to be correct, the signs are by no means pathognomonic, for VON NOORDEN has demonstrated a wholly analogous behavior of the uric acid in certain febrile disturbances and in various affections of the lungs, heart, and stomach. Both the theoretic and practical interest of the observations will of course be materially diminished if VON NOORDEN'S results are confirmed.

EBSTEIN'S[1] theory of a local accumulation of uric acid, which leads first to inflammation and necrosis of tissue, and later to deposition of urates in the diseased part, has been modified by VON NOORDEN.[2] The latter does not believe that the primary changes in the tissues result from the action of uric acid, but prefers to assume that the formation and de-

[1] F. Levison: Die Harnsäure-Diathese, Berlin, 1893.

[2] E. Pfeiffer: "Ueber Harnsäure und Gicht," Berl. klin. Woch., 1892, S. 383, 412, 461, 490, 536.

[1] Ebstein: Beiträge zur Lehre von der harnsäuren Diathese, Wiesbaden, 1891.

[2] C. von Noorden: Lehrbuch der Pathologie des Stoffwechsels, Berlin, 1893.

position of the uric acid are the results of a secondary process set up by the presence of a special ferment acting locally, entirely independent of the amount and behavior of the uric acid formed elsewhere in the body.

Nearly all of the recent articles on gout have had something to say regarding the treatment. As to the most suitable dietary there is marked disagreement; Roberts, Haig, and Duckworth urge the advantages of a vegetable diet, while Pfeiffer and von Mering agree with Cantani in allowing a liberal supply of meat and limiting the carbohydrates. It has seemed to us that, in the existence of such contradictory opinions, it may be that the quantity of the food ingested, rather than the quality, is of importance for the well-being of the patient. Badt and Levison, in curious consonance with the old saying, *Quod ali cibus est aliis fuat acre venenum*, suggest that the diet be ordered, not from the diagnosis of gout, but according to the "individuality of the patient." Still it has been admitted by all authors from very early in its history that gout is most common in countries where "meat-eating" habits prevail.

The therapeutic value of the alkaline treatment has been, it would appear, much overestimated, at any rate as far as the good derived from the alkalies in themselves is concerned. Roberts, especially, insists that the benefits of the method are due entirely to the large amounts of water taken. The alkalies are nevertheless much in vogue, and will probably continue to be used, for people are often ready to "take medicine" when they cannot be induced to "drink water," and, besides, the swallowing of large quantities of plain water (to which neither acid nor alkali has been added) is by no means easy, as anyone may readily convince himself who will make the attempt on several successive days.

Mordhorst[1] has strongly recommended the use of the "Wiesbadener Gichtwasser," which contains tolerably large amounts of bicarbonate of soda. When drunk for some time, it renders the urine of both the day and the night slightly alkaline. Occasion is taken by von Noorden in this connection to correct a statement of wide currency, viz., "that since uric acid and urates separate out only in an acid medium, it is necessary that the body-juices in the neighborhood of gouty deposits should be acid." While it is certainly true that the crystals in the deposits are generally those of acid urates, it is not true that the surrounding fluids are necessarily acid, and indeed in three cases in which fresh, soft tophi were opened and the reaction of the contents tested they were found to be alkaline, although acid urate crystals were present in large numbers.

That these acid salts should be stable in an alkaline medium seems at first paradoxic, but the following experiment sheds some light on the subject. A uric acid concretion, sterilized and dried *in vacuo* over sulphuric acid, was suspended in sterile blood-serum for twenty-four hours. Only after the addition of relatively large amounts of alkali could any appreciable loss in weight in the mass be detected. On the other hand, an aqueous solution of alkali of the same strength, under similar conditions, soon dissolved an essential part of the concretion. We learn from this that the alkali in the blood behaves very differently from alkali in water—in the former the affinity for acids is as it were held in bond. We already know something of a similar behavior of acids in albuminous fluids, and ignorance concerning the "bound" and "free" hydrochloric acid of the gastric juice has been largely responsible for the extensive polemic literature on the relative value of the various tests for hydrochloric acid.

Equally interesting is an experiment of Mendelsohn's[1] through which it was shown that a mixture of a strongly alkaline water (Vals), with an equal volume of distilled water, dissolved twice as much of a given weight of uric acid as did equal parts of the same alkaline water and urine, the urine (like the blood-serum in von Noorden's experiment) depriving the other constituents of the power of dissolving uric acid. The relation of experiments such as these to the question of the therapeutic value of the alkalies becomes at once apparent.

It would be interesting, had we the space, to refer to the various researches undertaken to determine the action of *piperazin* in the body, and its value as a remedy for gout. As everyone knows, this substance has a strongly alkaline reaction, and an extraordinary power in solution of dissolving uric acid. These chemic properties gave rise to hopes which have not been realized, as far as any marked increase in the elimination of uric acid after its

[1] Mordhorst: "Zur Lehre von der Gicht," Wien. med. Woch., 1893, No. 10-16. Also, Verh. des X. Congr. f. in. Med., 1891, S. 443, and Therap. Monatsh., 1893, No. 8.

[1] Mendelsohn: "Zur Therapie der harnsäuren Diathese," Verh. des XII. Congr. f. in. Med., 1893, S. 367.

administration is concerned, and confidence in its powers as a uric-acid solvent has been much shaken since MENDELSOHN has shown that it (like the ordinary alkalies) when added to normal urine does not increase the power of that fluid to dissolve uric acid.

To discuss this side of the subject fully would carry us too far, but we cannot close this article without first referring, if only briefly, to the highly interesting investigations made by MEISELS,[1] and independently by BIESENTHAL,[2] concerning the action of piperazin upon the uric acid in living birds. These workers produced the well-known experimental nephritis in hens and pigeons which results from subcutaneous injection of potassium chromate and leads to a retention in the blood of the urinary constitutents. It will be recalled that the end-product of proteid metabolism in birds is not urea but uric acid. Ordinarily in such cases of artificially induced uremia, crystalline urates are deposited in different parts of the body, but when the birds were treated with piperazin the deposits could in the majority of cases be prevented. In the few cases in which deposits occurred in spite of treatment it is fair to presume that the retained uric acid and the absorbed piperazin did not exist together in the blood in the most suitable proportions. The administration of alkalies had no power to prevent the deposits. The piperazin, like urocedin (which has been shown by MENDELSOHN to prevent the separation of urates in the urine from solution), could not dissolve the deposits when once they had been laid down.

While we welcome as extremely suggestive the results of these experiments of MEISELS and BIESENTHAL, yet we agree with VON NOORDEN in advising great caution as regards their application to gout in human beings. As he says, the birds are not *gouty*, but simply *uremic*, and, moreover, it is very probable that the relations of the blood and lymph to uric acid in birds are quite different from those in mammals. One difference between the uric-acid retention of gout and that produced artificially in birds has already been demonstrated: in the latter the precipitation occurs on the free surface of endothelial structures, apparently on account of the concentration of the lymph, while in the former the uric acid is to be found within the bodies of the cells and in the intercellular substance, a deposition of urates occurring on the free surface of a lymph-sac (joint-cavity) only after erosion of the cartilages.

The treatment of gout by piperazin must for the present, then, be looked upon as purely empiric; the belief that we have a rational therapeutic basis in the limited knowledge thus far gained from animal experiments would only lead us in false directions and prevent further progress. The drug appears to be favorably viewed by many, and recently WITTZACK,[1] especially, has warmly supported the earlier recommendations of BIESENTHAL as to its value.

From what has been said it is clear that the problems of gout require for their solution long and patient chemic research and a much more intimate knowledge than we have at present of the complex phenomena of animal chemistry. When what occurs normally is so imperfectly understood, it is but little wonder that the still more subtle changes which occur under pathologic conditions, deep down in the body-metabolism, should prove so elusive when we attempt to grasp them. But the corps of trained and earnest workers in this field is rapidly swelling its numbers, and it is not too much to hope that when the new science of "Physical Chemistry," in which such enormous advances have been made during the past eight or nine years (through the efforts of VAN 'T HOFF, ARRHENIUS, OSTWALD and others), shall have been applied to the problems of physiology and pathology, many of the things now secret will be revealed.

[1] Meisels: "Experimente mit dem Piperazin und anderen uratlösenden Mitteln," Ung. Arch. f. klin. Med., i, 1893.

[2] Biesenthal: "Wirkung des Piperazins bei künstlich erzeugten Harnsäure-ablagerungen im thierischen Organismus," Berliner klin. Wochenschr., 1893, No. 33.

EDITORIAL COMMENTS.

Transient Aphasia in the Course of Pneumonia.—It is not uncommon to encounter palsy, and at times other evidences of interference with cerebral function, of varying degree of transiency, in persons who exhibit manifest or probable arterio-sclerotic changes. The explanation ordinarily given is that of ischemia and interference with the nutrition of the brain, resulting from narrowing of the lumen of the cerebral vessels, in consequence of the thickening of their walls as a result of the degenerative process. Similar phenomena are also not infrequently observed in cases of acute or chronic nephritis, and here the explanation is a somewhat different one. It may be conceived, on the one hand, that a dropsical effusion has taken place and

[1] Wittzack: "Harnsäure-Diathese und Piperazin," Münch. med. Wochenschr., 1893, No. 28.

exerts compression of the brain; or, on the other hand, that there are present in the blood noxious products that the kidneys have failed to remove. Manifestations of a like character are from time to time further observed in the course of the infectious diseases. In some of these cases structural changes are induced, but there are others from which, on account of the transiency of the symptoms and the absence of sequelæ, the occurrence of a gross lesion can be excluded. In a communication presented at a recent meeting of the Société Médicale des Hôpitaux, CHANTEMESSE (*La Semaine Médicale*, 1893, No. 73, p. 582) called attention to the occurrence of transitory aphasia in the course of pneumonia, and cited an illustrative case. It was pointed out that when this complication occurs it usually appears toward the close of the second or third day of the attack, being ordinarily preceded by headache and vertigo, and sometimes by numbness and tingling in the right side of the face and in the right upper extremity. The aphasia may set in abruptly, without loss of consciousness; at other times it may become manifest after a typical apoplectiform seizure. The characters of the impairment of speech do not differ from those dependent upon an organic lesion of the third frontal convolution upon the left side of the brain. The paralysis may involve the entire right side of the body, but usually only the inferior portion of the right side of the face, the right half of the tongue, and the right superior extremity are affected, while, as a rule, sensibility and the reflexes are not altered. In pronounced cases the paralyzed parts may be the seat of increased redness, and edema more or less circumscribed and increased by heat. These phenomena persist commonly for from a few hours to a few days, and seem in no way to influence the primary disease. Their fugaciousness excludes the possibility of organic disease, and their character and association are unlike those of hysteria. It seems probable that the condition is to be ascribed to the action of the toxic products of the activity of the organisms upon which the pneumonia depends, either directly upon the nervous centers or indirectly through the intermediation of the vasomotor system, causing contraction of the cerebral vessels to such a degree as to compromise the function of the parts controlling the peripheral mechanism. In the cases observed by CHANTEMESSE the pneumonia affected the right side.

Symphysiotomy in America.—DR. ROBT. P. HARRIS read his epoch-making paper on "The Remarkable Results of Antiseptic Symphysiotomy" before the American Gynecological Society at its seventeenth annual meeting held in Brooklyn on September 20, 1892. (See THE MEDICAL NEWS, October 8, 1892, p. 416.) Ten days later DR. CHAS. JEWETT, of Brooklyn, performed what for a long time was believed to be the first symphysiotomy on the American continent. Three days after this Dr. BARTON COOKE HIRST operated successfully in Philadelphia. (See THE MEDICAL NEWS, October 15, 1892, p. 451.) DR. HARRIS, to whom so much credit is due for the revival of the procedure, has by his persistence unearthed the fact that the first operation in America was performed on March 12, 1892, more than six months before his paper was read, and by DR. WM. THOS. COGGIN, then residing in the town of Freedman, Etowah County, Alabama, and now of Athens, Georgia, with a successful result for both parent and child. DR. COGGIN had become familiar with the operation while abroad several years before, and, convinced of its utility and its preference in suitable cases to embryotomy, performed it when the opportunity arose. It transpires that DR. COGGIN was anticipated only a short time, by PROF. PINARD, of Paris, in the performance of the first symphysiotomy outside of Italy. PINARD operated on February 4, 1892, seven weeks before COGGIN, the mother recovering, the child dying. From a paper read by DR. HARRIS at a recent meeting of the Philadelphia Obstetrical Society, we learn that in the year 1892, symphysiotomy was performed throughout the world in 81 accessible cases, with 11 maternal (and 24 fetal) deaths, distributed as follows: France 37 operations, with 6 deaths; Germany 11, with 2 deaths; Austria 6, with 1 death; Italy 9 and the United States 8, with no death; Russia 4, with 1 death; Brazil, Ireland, Switzerland, Holland, Canada and India each 1, with 1 death, in the Holland case. In the first six months of 1893 there were more symphysiotomies than in the whole of 1892, and the record of the year will probably reach two hundred, or more than the number of Cesarean and Porro-Cesarean cases of the world together.

As far as ascertained, there were twenty-seven symphysiotomies in the United States in 1893, and forty operations in North and South America, with four women and nine children lost, a maternal mortality of 10 per cent. There have been twelve operations in Philadelphia, or one-third of those in the United States. The operation has been performed in ten States and by twenty-six operators. Twenty-eight of the cases were in large cities.

Privileged Communications.—It is the object and purpose of the law to enable a patient to make a full statement of his physical infirmities to his physician, with the knowledge, says the Supreme Court of California, in the case of Flint's Estate, that the law recognizes the communications as confidential, and guards against the possibility of his feelings being shocked, or his reputation tarnished by their subsequent disclosure. To him the considerations are even more weighty that the privilege remain inviolate after he has gone to his grave, for his good name is left behind, deprived of his protecting care. His rights are not buried in the grave, and heirs and devisees quarrelling among themselves over a division of his patrimony should, in justice to his memory, not be allowed to waive the privilege. Consequently, the court holds that a statute which provides that, "a licensed physician or surgeon cannot, without the consent of his patient, be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient," rests upon a sound public policy, and cannot be waived by an heir seeking to set aside a will by proving by an attending physician that he prescribed for the testator for mental trouble. Reference is made to New York State, where there is a similar law, except that it provides that the privilege is present, unless "expressly waived by the patient," and it is uniformly held by the courts that the patient alone can waive the privilege, and when such patient is dead the matter is forever closed.

This would also seem to be the doctrine of many of the other States. But in Michigan, Missouri, and Indiana there are decisions under quite different statutes, which can, perhaps, give an heir power to waive the privilege. And in some other States the legal representative, the administrator, can waive it.

Typhoid Fever without Intestinal Lesions.—If it be shown that the affection most commonly known by the names of typhoid fever and enteric fever may exist in the absence of fever and without the presence of intestinal lesions, it would seem as if some more accurately descriptive name were needed. We have on a previous occasion pointed out the occurrence of apyretic typhoid fever, and evidence is not wanting that typhoid fever may exist without intestinal lesions. Three cases of the kind last mentioned have been reported by KARLINSKI (*Wiener medicin. Wochenschr.*, March 14, 21, 1891), and recently another by DU CAZAL (Soc. Méd. des Hôp., April 7, 1893; *Rev. des Sci. Méd.*, No. 85, p. 172). The last was that of a patient who for three weeks presented the symptoms of classic typhoid fever: headache, epistaxis, meteorism, rose-spots, continued fever, and albuminuria, with the development of bilateral pneumonia on about the fifteenth day. The case terminated fatally and upon post-mortem examination the lungs were found almost completely hepatized and the spleen enlarged, while the intestines and the mesenteric glands were perfectly uninvolved. Bacteriologic examination of the spleen, however, demonstrated the presence of typhoid-bacilli in pure culture. Cases of this kind must be considered as analogous with those of the exanthemata in which the cutaneous eruption is wanting.

Variolin.—It has come to light that in a neighboring city, in which wisely all school-children must be protected by vaccination or a previous attack of smallpox, some of the children have been treated "by the homeopathic administration of variolin in a highly potential state." Is it possible that the public will insist upon the inevitable sacrifice that must occur among those so treated in case of an epidemic of smallpox in order to demonstrate the fallacy and the absurdity of so-called homeopathic principles and practice?

REVIEWS.

SURGERY. By BERN B. GALLAUDET, M.D., Demonstrator of Anatomy and Clinical Lecturer on Surgery, College of Physicians and Surgeons, New York; Visiting Surgeon, Bellevue Hospital, New York; and CHARLES N. DIXON-JONES, M.D., Assistant Surgeon, Out-patient Department Presbyterian Hospital, New York. Being the final volume of the "Students' Quiz Series," edited by BERN B. GALLAUDET, M.D. 12mo, pp. 291, with 149 illustrations. Philadelphia: Lea Brothers & Co., 1893.

THE conviction is expressed by Dr. Gallaudet in the preface to this litfle book, that a "book written not as a compend or digest of surgery, but rather as one which would *explain*, would prove of advantage." As a consequence of this, one is impressed by the difference between the descriptive character of the replies to the questions which are given, and the dogmatic statements usually constituting the substance of books of this class. The idea is undoubtedly a happy one, and the result is that the book is not only readable, but that the facts which it presents to the student are set forth in such a manner as to appeal to his reason as well as to his memory, and, therefore, the more easily and permanently impressed upon him. The danger, so often incurred in "compends," of encouraging the acquisition of a superficial knowledge of the subject is also, as far as possible, avoided.

The style of the book is clear as well as compact. Each subject that it embraces we find fairly dealt with. Among the sections which we would especially commend for clearness and thoroughness are those upon Surgical Bacteriology, Diseases and Injuries of the Brain, and Diseases of, and Operations on, the Abdominal Viscera. The illustrations, of which there is a goodly number, are excellent and well selected, and the tabular presentation of many subjects will enable the student to fix the facts more readily in his mind. We do not notice any important omissions. One or two points which strike us are that, in speaking of elastic compression by the Esmarch strap, in the management of arterial wounds, it would have been well to have said a word of caution against the undesirable results sometimes obtained from its being too long kept upon a limb; and another is, that in mentioning the operations for hemorrhoids nothing is said of the "clamp and cautery" operation, a procedure which has many advocates among practical surgeons.

The book is up to the times, and well fulfils its object. We are sure that it will soon acquire the popularity it deserves.

A MANUAL OF PRACTICAL HYGIENE, DESIGNED FOR SANITARY AND HEALTH OFFICERS, PRACTITIONERS, AND STUDENTS OF MEDICINE. By W. M. L. COPLIN, M.D., Adjunct Professor of Hygiene at Jefferson Medical College, etc., and D. BEVAN, M.D., Instructor in Hygiene at Jefferson Medical College, etc. 8vo, pp. 441, and index. Philadelphia: P. Blakiston, Son & Co., 1893.

SCIENCE is cosmopolitan, and it is, therefore, not wholly commendable that one should note the nationality of a scientific work, but it is a matter of gratification that so useful and creditable a text-book as this is of American authorship. The work has been long in preparation, and a perusal of it shows that the delay has not been due to inaction, but to a desire to collect and properly arrange the vast amount of data of a rapidly growing science. The authors are both practical workers in the bacteriologic laboratory and teachers of hygiene, and are, therefore, enabled to give in concise and correct form the essential features of all microbes now known to be causally connected with diseases in man. Dr. Bevan has skilfully drawn, and the printer has skilfully printed in colors, the actual outlines of the important species. We must note here a commendable detail, namely, that in the chapter on Bacteria the drawings are, with one exception, drawn to a uniform scale of enlargement, which is most useful to students, who always have difficulties in comprehending these minute magnitudes. Equal praise cannot, however, be given to some of the details in the arrangement of the topics in this part. A succession of

Tetanus, Tinea Versicolor, and Tuberculosis suits the index but not the matter of a text-book.

The authors express freely and positively their opinions on disputed questions. It may be a question, however, if they are not too sanguine or too severe in some measures. Thus, we are told that marriage between tuberculous individuals should be prohibited, and association with the non-infected rendered impossible. "Paper," says a German proverb, "is patient," and it is not likely that simple dogmatic statements like these will work any good. Moreover, Cornet, in his elaborate paper, has shown that a great deal may be done toward rendering the tuberculous patient harmless to those around him.

It is gratifying to note that considerable care has been taken with the terminology; chemic terms are given mostly in the approved modern forms. A book like this has a considerable missionary function, and can do a great deal of good in promoting correct phraseology in chemistry and biology, in which medical men are not always exact.

We must note before leaving the matter the extended collection of data on the climate of various parts of the United States. The collection of these data has involved much labor.

The publishers' part has been well done, and we can feel sure that the book will quickly assume an honorable position in the field to which it is dedicated.

A Text-book of Physiological Chemistry. By Olof Hammarsten, Professor of Medical and Physiological Chemistry in the University of Upsala. Authorized Translation from the Second Swedish and from the Author's Enlarged and Revised German Edition. By John A. Mandel, Assistant to the Chair of Chemistry in the Bellevue Hospital Medical College, etc. First edition, first thousand. 8vo, pp. x, 486, and index. New York: John Wiley & Sons.

Much valuable matter in applied organic chemistry is presented in Swedish and Dano-Norwegian literature, which finds its way but slowly and imperfectly into English, in consequence of the limited knowledge of the Scandinavian languages possessed by medical men in this country and in England. Hammarsten, Sebelien, and Kjeldahl have been especially noted for their practical researches in physiologic chemistry. The present treatise is, therefore, welcome, and proves to be an excellent summary of important facts of the science. The author's preface to the original Swedish edition is not given, but that to the German edition is, and in it he calls attention to the fact that the work is not intended as a detailed text-book, and that the arrangement of the matter is made necessary by the manner in which the subject is taught in Sweden, as laboratory practice in physiologic and pathologic chemistry is obligatory with medical students. The work is, however, not a manual of laboratory practice alone. Full space is assigned to descriptive matter. The analytic and practical parts are distinguished by special type.

In an introduction covering twelve pages the author discusses the general chemistry and physics of vital processes, and furnishes us with a clear and interesting sketch of the important actions produced by organized and formless ferments, *i. e.*, microbes and enzyms, especially the hydrolytic actions. Reference is also made to the nature of antiseptics, but the statement that salicylic acid does not noticeably interfere with the action of enzyms is not invariably applicable. The subject of the toxic products of putrefaction and physiologic action is also concisely and clearly presented. The chapter on milk is highly commendable, giving all the important and established data about cow's milk, as well as human milk. We note that the theory that the fat-globules are surrounded by an albuminous envelop seems to be untenable.

Over one hundred pages are devoted to the urine, thus enabling the author to give an elaborate account of the normal and abnormal conditions of that secretion. Many tests are given, but the translator recognizes that the chapter is rather too extended for the practical workers, and suggests a reference to smaller manuals for the quick and clinical methods.

The work, taken as a whole, is a valuable addition to the available sources of information for teachers of physiology and medical chemistry. The translation is well done, but the chemic terms are not always satisfactory. Such terms as "cholesterin," "benzol," "glycerin," should be represented by their modern forms, "cholesterol," "benzene," "glycerol."

In typographic execution the book is not especially pleasing. The impression is too heavy, and the practice of printing all proper names in small capitals is not to be commended.

A System of Genito-urinary Diseases, Syphilology, and Dermatology. By Various Authors. Edited by Prince A. Morrow, A.M., M.D., etc. With illustrations. In three volumes. Vol. II: Syphilology. 8vo, pp. 917. New York: D. Appleton & Co., 1893.

Like its predecessor, this large and handsome volume is mainly the work of New York men, fifteen of its twenty-three authors claiming residence in that city.

Not many years ago syphilis was a leading topic in the minds of the profession, but of late it has been largely overshadowed, or rather crowded out, by the great advances made in other directions. It is well, perhaps, that interest should be revived in it; but we do not think that the book before us is an important addition to the literature of the subject, calculated to eclipse by its superior merit the admirable standard works already existing. Of course, there have been within the last two decades, in Europe especially, some valuable records of observation and experiment, which seem to be freely quoted in these pages. But the reader will not, in our opinion, find that much progress has been made in practical every-day matters.

In his preface the editor says: "Modern bacteriological researches have given us a clearer conception of the important rôle played by microörganisms in the production of syphilitic phenomena. While the theory of the bacterial origin of syphilis rests upon hypothesis rather than upon absolute demonstration, yet the general recognition of a specific microbe as the essential etiological factor of the action of its toxins upon the tissues, and of the pathogenetic influence of pyogenic microbes, has thrown a flood of light upon the interpretation of many of the morbid processes of syphilis." We must confess our

inability to understand this glittering generality, and our doubt as to the value of a theory which rests upon an hypothesis. Nor can we find in the body of the work evidence of any such brilliant illumination. Our conviction remains that syphilis is as yet a disease the phenomena of which can be described but not explained; and that the bacteriologic laboratory has done hitherto little, if anything, to enlighten this field of research. It is still to clinical experience that the physician must look for the knowledge which will enable him to recognize and combat this versatile enemy.

The arrangement of the subject is good, and will be found convenient by the reader. Chancroid is very properly assigned a separate chapter at the end of the book.

We note occasional awkward slips of style and stilted modes of expression. Thus on page 289: "Syphilis does not produce tuberculosis or rhachitis, though the latter has been affirmed of rhachitis by Parrot." And on page 663: "Enough has been said to substantiate the fact that it is not an irrelevant matter for a person to be adjudicated a syphilitic."

Perhaps the best article in this work is that by White, of Philadelphia, on the treatment of the disease; it is very full, clear, and practical, or as our English brethren are wont to say, helpful. Another of much merit is by Armstrong, on "Syphilis in its Relation to Public Health," and "Visceral Syphilis" is ably discussed by Councilman.

The illustrations are numerous, and for the most part very good; some of them are strikingly so.

A Text-book of Physiology. By Michael Foster, M.D., F.R.S., Prelector in Physiology in the University of Cambridge; Fellow of Trinity College, Cambridge, Eng. New (fifth) American from the fifth English edition, thoroughly revised, with Notes and Additions. In one octavo volume, 1083 pages, with 316 illustrations. Philadelphia: Lea Brothers & Co., 1893.

No better recommendation can be desired for a medical book than the knowledge that a large edition has been exhausted in two years. The fourth edition was published in 1891, and now the fifth comes to us, revised to date in all the branches of this fundamental science of medicine. Prof. Foster's text-book differs from others in that it attempts to impart a general knowledge of the human body before it begins to specialize the various functions. We all know how difficult it is to teach genuine physiology to students who have not had any previous instruction in the science, because the elucidation of almost any one of the physiologic phenomena presupposes the knowledge of one or more of the general features influenced by or influencing the subject under discussion, and in this respect Prof. Foster's book seems to take a step in the right direction. When a book is equally well written throughout in a fair conservative spirit, it is always difficult to select some one part, but we are glad to find in the chapter on Absorption a final definite statement which relegates the often quoted and often discussed *physical* diffusion and osmosis to well-deserved oblivion. Prof. Foster says: "Diffusion which takes place in a living cell is so different from ordinary diffusion through a dead membrane that it is undesirable to speak of it by the same name, for the passage of material through the pores of a living cell takes place according to laws quite different from that of ordinary diffusion." It is high time that the *physical* theory of life were left out of our medical text-books.

We can heartily recommend the book to the general practitioner as well as to the medical student; its typographic outfit is of the customary high standard of the publishers; the illustrations are numerous, many being original, and in spite of its 1100 pages it forms a volume of convenient size.

New York County Medical Association, State of New York. Register of Members: Manual of Information. New York: Printed by the Association, 1893.

This little publication contains an official list of the members of the New York County Medical Association for the year ending June 30, 1893, together with the names of other practitioners of rational medicine, thus making as complete a list as can be obtained of all regular physicians resident in the city and county of New York. In addition there will be found interesting information concerning the New York County Medical Association, the New York State Medical Association, the American Medical Association, the Pan-American Medical Congress, and International Medical Congresses. In the schism that exists in the profession of New York State, the County Association recognizes the authority of the Code of Ethics, and maintains its adherence to the American Medical Association. That the Association is in a flourishing condition needs no better demonstration than the fact that during the preceding year its membership was augmented by a net increase of 170. There remains but to add the warmest commendation for the course the Association has pursued.

CORRESPONDENCE.

AN OPPROBRIUM OF MEDICINE.

To the Editor of The Medical News,

Sir: The chief advance in medical science of late years has consisted, so to speak, in retrogression. This looks like a paradox, but in reality it is a statement consistent with reason, as I shall endeavor to show in a clear and conclusive manner.

At the commencement of the nineteenth century there was an opinion generally prevalent amongst the medical faculty, practically at least if not theoretically, that every disease possessed a distinct constitution of its own; that it was, in fact, a separate entity; a parasite, like the mistletoe, fattening on the life-juices of its involuntary host. Between many of the manifestations there were points of resemblance, and certain signs and symptoms were common to nearly all; but each malady nevertheless stood firmly on its own bottom; and was not to be mistaken for, or confounded with, any of its congeners.

The brain of a medical practitioner a hundred years ago might have been likened to a sheet of paper divided longitudinally into two unequal parts. On the narrow side there was a formidable string of names, representing

diseases; and on the other an equally portentous array of antidotes. The enemy's forces were enumerated *seriatim* on the left, and on the right there was inscribed a detailed list of the ammunition by means of which they were to be routed and destroyed. It is true that for each ailment in particular there did not exist a special remedy warranted to slay or at all events scotch the foe, but an attempt was made in the desired direction by combining many drugs in one lengthy prescription. The medical general fired off a salvo at the invader; bringing his case-shot to bear in the hope that some of the numerous missiles therein contained might reach the mark. If one missed, another might hit, and it was fervently hoped that, with luck, the daring intruder would be placed *hors de combat* as a result of the maneuver.

By slow degrees this happy-go-lucky state of affairs began to die away. Diseases ceased to be treated as though they were living creatures; the natural ills that flesh is heir to grew to be regarded as simply the result of a disordered system—whatever that might mean; and medicines, no longer esteemed as antidotes, fell completely into disrepute. It was the apotheosis of *laissez-faire*. Expectancy was the god of the moment, and masterly inaction became the order of the day. Here was change with a vengeance; but the triumph of the everlasting nay did not long endure. Reaction was inevitable, and it is under that reaction we are now suffering.

Disease has once more become an entity! Every separate affection has its own distinctive microbe—the cause of all the trouble, the *fons et origo malorum!*

This, many will think, is bad enough, but worse is to follow. Homeopathy, so long well-nigh moribund, is now absolutely rampant. The only way to combat these nocent microbes is by opposing them with armies of their own kind, in all probability equally mischievous. "Set a bacillus to catch a bacillus" is the cry of the *fin de siècle* physician, thanks to his researches in "the dead-house, the rabbit pen, and the laboratory."[1] Nature and the clinique are allowed to go by the board, and herein lies the opprobrium alluded to at the commencement of this article.

Having thus ended the general portion of my thesis, I crave permission to draw attention to one disease in particular, wherein no progress whatever has been made of late years, whether as regards etiology or treatment, in consequence, as I believe, of universal attention being directed toward microbes, and toward microbes alone.

The disease I refer to is deafness. It would be impossible to imagine an affection calculated to render life less worth living, but that is not the point I am at present anxious to elucidate. My object will, perhaps, best be attained by narrating a case which from personal knowledge I guarantee as perfectly authentic and unexaggerated.

Some two years ago the patient, who was then living in Egypt, first noticed, at the age of fifty-one, that he was slightly hard of hearing; having previously, all his life, enjoyed perfect possession of the sense, and being in fairly good health at the time. The deafness continued for about six weeks, in both ears alike; but it was very trifling, and did not in the least interfere with social intercourse. Then, suddenly, without any apparent cause, what he describes as "unbearable" tinnitus set in on the left side, the prominent feature being an exaggerated pulsation-sound, synchronous with the heart's action. This commenced during the night, and the next morning the sufferer was completely deaf in the left ear. The tinnitus gradually became less marked, and for ten days matters remained *in statu quo*. In the mean time, however, a medical man was consulted. He duly examined the ears and pronounced both drums intact, save that they were excessively indrawn and tense, with the ossicles projecting prominently. The treatment consisted in catheterization of the left Eustachian tube, with insufflation on both sides according to Politzer's method. There was no improvement whatever. Then the doctor proceeded to pass a catheter into the right Eustachian tube, and according to the patient the *immediate* result was total deafness on that side also, accompanied by what he describes as a sensation as though a fluid were being poured out into some cavity inside his right ear. Since then he has remained completely deaf on both sides. He can detect sharp metallic sounds readily, but is quite unable to hear the human voice even when it is conveyed through the most powerful trumpets or tubes. At no time throughout the case was there the slightest giddiness or loss of conciousness; neither did he ever experience any pain.

The patient then returned to England and consulted a well-known London specialist, who ordered him iodid of potassium in extra-large doses, with blistering, followed by a weak mercurial inunction, behind the ears. It must here be noted that there is no history of syphilis in the case; and the most careful examination has failed to reveal the existence of any traces of that disease. This treatment was kept up for three months, without the slightest benefit as regards the deafness, or the tinnitus which, it should have been mentioned, was the most distressing part of the complaint. The sufferer was then induced to consult another specialist, his friends being of opinion that the potash was gradually bringing him to death's door. The second professor made a most exhaustive study of the case, and came to the conclusion that the portion of brain presiding over the sense of hearing was at fault. He recommended phosforus; but the only result of a prolonged course of that powerful medicament was a totally unnecessary and undesired stimulation of the generative organs.

Having had enough of specialists, my subject next consulted a general practitioner who happened to be a great believer in iron as a universal panacea. He prescribed the tincture of the perchlorid with Epsom salts.

It must be allowed that this treatment, which was persevered in for a lengthened period, had a slightly beneficial effect on the deaf man's general health, but his local affection remained precisely *in statu quo*.

The next essay was electricity pure and simple, under the guidance of a specialist who said there was just a chance of its doing good if persevered in, but that the odds were greatly against it. For four long months the battery was duly applied twice a day for twenty minutes at each sitting, but the effect was absolutely *nil*. Since then the patient has abandoned all radical treatment in despair, nor am I able to suggest any medical course that

[1] Wallian: The Medical News, November 11th, 1893.

would seem to afford even the slightest hope of success. The tinnitus is the most troublesome symptom, but it is rendered bearable by opium. But for this truly named drug the unfortunate man says he does not think he could bear up against the incessant, brain-wearing noises.

The question I should like to ask now is: Would an operation afford any prospect of cure? Would washing out the middle ear be likely to give good results? The patient himself says that if, when the deafness first came on, his head had been shaved and repeatedly blistered, he believes it would have led to the absorption of the effusion which he feels confident has taken place somewhere inside his head.

I should have said that when the deafness first made its appearance my subject was exposed to a great deal of annoyance and worry. His eyesight and sense of smell are unaffected, and his general health and bodily activity quite unimpaired.

AN ANGLO-EGYPTIAN OFFICIAL.

NEWS ITEMS.

The Congress of American Physicians and Surgeons will be held in Washington, D. C., May 29, 30, 31, and June 1, 1894. The following preliminary program has been arranged:

May 29th.

3 P.M. Congress opened by the Chairman of the Executive Committee.

From 3.30 to 5 P.M. General Session of the Congress under the direction of the Association of American Anatomists.

"Morphology as a Factor in the Study of Disease." Opened with a paper by Dr. Harrison Allen, and discussed by Dr. Thomas Dwight, Dr. Frederick H. Gerrish, Dr. Frank Baker, and Dr. Burt G. Wilder.

May 30th.

From 2 to 3.30 P.M. General Session of the Congress under the direction of the American Climatological Association.

"Sewer Gas." The Bacteriology, by Dr. Alexander C. Abbott. As a Cause of Disease, by Dr. Abraham Jacobi.

From 3.30 to 5 P.M. General Session of the Congress under the direction of the American Dermatological Association.

"The Distribution and Control of Leprosy in the United States." The Distribution, opened with a paper by Dr. J. Nevins Hyde and discussed by Dr. William A. Hardaway and Dr. James E. Graham. The Prophylaxis and Treatment, with a paper by Dr. James C. White, and discussed by Dr. George H. Fox, Surgeon-General W. C. Wyman, U. S. M.-H. Service, and Dr. Joseph D. Bryant.

7 P.M. Dinner to the Guests of the Congress at the Arlington Hotel.

May 31st.

From 2 to 3.30 P.M. General Session of the Congress under the direction of the American Association of Genito-urinary Surgeons.

"Nephritis in its Surgical Aspects." Opened with a paper by Dr. Edward L. Keyes, followed by a paper from Dr. George M. Sternberg, Surgeon-General United States Army, on The Bacteriology of Nephritis, and discussed by Dr. George Chismore, Dr. L. Bolton Bangs, Dr. Francis S. Watson, and Dr. W. N. Wishard.

From 3.30 to 5 P.M. General Session of the Congress under the direction of the American Gynecological Society.

"The Conservative Surgery of the Female Pelvic Organs." Papers will be read by Dr. William M. Polk and Dr. William Goodell.

7.30 P.M. Address by the President of the Congress, Dr. Alfred L. Loomis, on The Influence of Animal Experimentation on Medical Science. To be followed by a Reception.

June 1st.

1.30 P.M. Business Meeting of the Congress.

From 2 to 3.30 P.M. General Session of the Congress under the direction of the American Laryngological Association.

"The Surgery of the Accessory Sinuses of the Nose." To be discussed by Dr. F. H. Bosworth, of New York; Dr. J. N. Mackenzie, of Baltimore; Dr. J. H. Bryan, of Washington, D. C.; Dr. J. O. Roe, of Rochester, N. Y., and others.

From 3.30 to 5 P.M. General Session of the Congress under the direction of the American Neurological Association.

"The Influence of Infectious Processes on the Nervous System." Pathology and Etiology, by Dr. James J. Putnam. The Relation to General Nervous Diseases, by Dr. E. C. Seguin. The Relation to Mental Disease, by Dr. Charles K. Mills. The Therapeutics, by Dr. F. X. Dercum.

Von Rosthorn has been made Ordinary Professor of Obstetrics and Gynecology in the German University of Prague.

BOOKS AND PAMPHLETS RECEIVED.

Des Polypes de la Cloison des Fosses Nasales. Reprinted from Annales de la Policlinique de Paris, 1893.

A Rational Treatment of Prostatic Obstruction in Old Men. By G. Wiley Broome, M.D. Reprinted from the St. Louis Medical Review, 1893.

Children's Rights. An Address. By I. N. Love, M.D. St. Louis, Mo., 1893.

The Value of the Ophthalmometer in the Determination of the Axis and of the Amount of Astigmatism. By Louis J. Lautenbach, M.D., Ph.D. Reprinted from the New York Medical Journal, 1893.

Suppurative Appendicitis. By L. H. Laidley, M.D. Reprinted from the Journal of the American Medical Association, 1893.

The Technique and Management of Pelvic Surgical Cases. By A. V. L. Brokaw, M.D. Reprinted from the Annals of Gynecology and Pediatry, 1891.

The President's Address. Delivered before the Annual Meeting of the American Gynecological Society, May 16, 1893. By Theophilus Parvin, M.D. The Union of Obstetrics and Gynecology. By Prof. F. Winckel, M.D. Reprinted from Vol. XVIII. Gynecological Transactions, 1893.

Therapeutical Superstition. By George T. Welch, M.D. Reprinted from the Transactions of the Medical Society of the State of New Jersey, 1893.

Inguinal Hernia in the Male. By Henry O. Marcy, A.M., M.D., LL.D. Pamphlet. Boston, 1892.

Witty, Wise, and Wicked Maxims, with a Preface. By Henri Pène Du Bois. New York: Bretano's, 1892.

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ORIGINAL ARTICLES.

A NEW AND SUCCESSFUL TREATMENT OF HAY-FEVER—THE VIEWS OF THE PROFESSION.[1]

By SETH S. BISHOP, M.D.,
OF CHICAGO

I HAVE endeavored to solve the perplexing question why attacks of hay-fever, or nervous catarrh, come on persistently the first thing in the morning on awakening from sleep. This happens even when the previous day has been one of immunity, and the night one of undisturbed repose; when there has been no change in the contents of the sleeping-apartments and no ingress of dust or air through any direct communication with the outside atmosphere.

I hope, but do not insist, that my studies and experiments in elucidating the cause of these attacks have resulted in solving this problem of hay-fever. If so, it will become apparent what an important advance we shall have made in the pathology and treament of this disease.

It is necessary to make this paper only an imperfect abstract of what I have prepared, for the following reasons: My desire to present the latest obtainable information on the opinions and treatment of the leading specialists and writers; the large amount of original observations and experiments and corroborative evidence I have accumulated; and the specified condition that the essay "must not exceed four thousand words."

Uric acid as a cause. Human blood is normally slightly alkaline and contains uric acid in the form of urates in small quantity, about five to eight grains being secreted every twenty-four hours. When a much larger quantity is secreted it is capable of producing irritation and inflammation of certain structures of the body, unless it is promptly eliminated. It is well known that uric acid has an irritating action on the nervous centers. Alexander Haig, of London, a sufferer from migraine, or sick headache, accounts for vertigo, convulsions, depression, irritability, sleeplessness, pains and neuralgia of varying sorts, migraine, paralysis, etc., by the excess of uric acid in the system. He regards the various functional disorders as a result of the vascular conditions produced by uric acid; and these views are concurred in by Thomas J. Mays, Murchison, Conklin, Ebstein, Quinquaud, and others. Haig studied, in his own person, the relation of uric acid to attacks of migraine, a functional nervous affection, and found that during the attacks the uric acid predominated in the blood. Its presence in excess accounts for exacerbation of pains in rheumatism and gout, and Lever contends that these diseases are primarily due to the action of this acid on the brain, the spinal cord, or the solar plexus of nerves.

In persons suffering from intense itching, uric acid and the urates are found in excess. Periodic sore-throat, which often comes on about the beginning of May, yields to anti-uric-acid treatment, or a change to a warm, sunshiny climate. This condition is analogous to hay-fever. The administration of from three to six grains of uric acid a day will result in patches resembling eczema, which I would term the dermal analogue of coryza. Common coryza, which might be aptly called the twin of hay-fever, may itself be accounted for by the irritating action of uric acid in excess in those individuals who are constitutionally predisposed to nasal irritation.

According to Dr. N. S. Davis, Murchison, and other authorities, the poisonous effects of varying degrees of excessive uric-acid formation or retention are manifested by one or more of the following symptoms: Headache, usually most severe in the morning, and often referred to the back of the head; want of appetite; nausea and vomiting; flatulent indigestion; diarrhea; asthma; blindness; deafness; subjective noises in the ears; numbness of the skin and creeping sensations; over-sensitiveness and pain in the skin; impaired memory; melancholia; delirium; insensibility (coma); and epilepsy. Familiar examples of some of these manifestations of uremic poisoning are seen in the loss of memory, in delirium, convulsions, coma, and death from chronic nephritis.

The pertinency of these remarks will become apparent in what follows. The blood is more alkaline in the morning than at any other time of the day, reaching its point of greatest alkalinity about nine o'clock. It is more acid during active work, and the acidity reaches its highest point about midnight. The uric acid is most liable to be in excess when the alkalinity is the greatest; that is, when the blood is in the condition of a more active solvent. This alkalinity of the blood and consequent pre-

[1] The Prize Essay of the United States Hay-fever Association for 1893.

dominance of such an irritant as uric acid, following the inaction of the night and preceding the bodily activity of the day, may answer the question why paroxysms of hay-fever, asthma, migraine, angina pectoris, and other nervous disorders prevail during the early morning hours.

ANTI-URIC-ACID TREATMENT.

Mineral acids diminish the amount of uric acid excretion and alkalies increase it. Acids relieve the headache of migraine and alkalies aggravate it. Haig found that diminishing the alkalinity of the blood freed it from uric acid, relaxed the small arteries, relieved the headache and mental depression. Increasing the alkalinity increased the uric-acid excretion, contracted the small arteries, slowed the circulation, caused languor, depression, headache, and, in epileptics, a fit.

Repeated examinations show that uric acid is excreted in larger quantities in warm than in cold weather, which may account for the greater prevalence of irritability of temper, depression of spirits and suffering from headache and hay-fever during the warm months.

The deductions I have drawn are founded upon proved scientific facts, for many of which I am especially indebted to Haig and to others whom I have mentioned. In the original of this paper I have taken pains to give each investigator ample credit by liberal quotations. I am obliged to omit these and give results only. Following out their logical indications I have experimented with an acid course of treatment in hay-fever; that is, I have endeavored to prevent the blood from reaching its maximum of alkalinity and the consequent uric-acid excess between midnight and noon, knowing that if attacks were prevented during this half of the day, immunity was more likely to be enjoyed during the remaining hours. This treatment stopped the attacks. To accomplish this I have employed mineral acids, although Bence Jones states that citric acid (lemon-juice) in sufficient quantities will produce the same effect. The results of this experiment have far exceeded my expectations. So far as the experience of one experimenter goes, the anti-uric-acid treatment I have inaugurated is a success. I began with the dilute sulfuric acid, from 10 to 30 drops in a wine-glass of sweetened water two or three times a day. It should be taken through a glass tube to prevent injury to the teeth, and the less sugar one takes the better. If this should produce griping pains and diarrhea, as I have known it to do, aromatic sulfuric acid may be substituted in the same doses. I might add that this is the best internal remedy against cholera. Another remedy, the acid phosfate of sodium, is also a good nerve-tonic. It should be taken in doses of one or two teaspoonfuls in a glass of water on retiring at night and the first thing on awaking in the morning. If nasal irritation appears during the day a good dose in plenty of water should be taken. Hot water can be used if one is chilly. The early morning dose should be the largest, and it is a decided advantage to take plenty of water, for this tends to stimulate the circulation, to produce a glow of warmth and to start a free perspiration. This is a very important point, for it is the experience of hay-fever sufferers that when they have sneezed enough to get into a heat and profuse perspiration, the sneezing decreases or stops. The acidulated drink for the morning dose should be prepared at bedtime and placed within easy reach, so as to be taken at once on awaking, without uncovering.

I would request that during the season of attacks the simple and harmless acid treatment here outlined be given a fair and faithful trial, and that everyone who does so shall communicate to me the results for the benefit of all in a future publication. I do not claim that this treatment will prevent suffering from other causes than the important one against which it is given. Avoidance of all other causes and treatment to meet other indications must not be neglected. I base my recommendation of this method, aside from the uric-acid theory of hay-fever—here offered for the first time, so far as I know—solely upon the beneficial results actually obtained from its use.

By neutralizing the acid phosfate, which was my first choice in these experiments, and rendering it alkaline with soda, and thus converting it into a ready solvent of uric acid, I have been able to precipitate hay-fever attacks, and, on the other hand, I have dissipated a series of hay-fever attacks and induced the characteristic pains of gout by full doses of the acid.

Preventive treatment. The treatment thus far laid down is for the periods of suffering only, and is to be followed up by other means to prevent the recurrence of attacks by keeping the amount of uric acid in the blood down to the normal. The solvent action of salicylate and phosfate of sodium on uric acid constitutes these the best remedies for promoting the elimination of this acid from the body. Uric acid may have been stored up in the liver, spleen, and other tissues for a long time, and through improper diet and indigestion there may have been excessive formation, though Haig denies the latter proposition. I believe both theories to be correct, and in a conversation with N. S. Davis he expressed the same conviction. If the blood is rendered more alkaline it dissolves the excess of acid out of the tissues, and sweeps it out of the body through the kidneys and skin. The salicylate

of sodium should be taken for this purpose in small doses for a considerable time preceding and following, but not during, attacks. For example, if the attacks come on the 20th of August, doses of 2, 4, or 6 grains of the salicylate from one to three times a day, should be begun forty days before. As much as possible, meats, sweets, beers, wines, etc. should be avoided and the diet limited mostly to milk, fruits, vegetables, and fats, such as butter, etc. I do not insist on this rule except in severe cases, but it illustrates a diet that is less productive of uric acid. During eight years of this diet Haig was able to prevent his sick-headache, but a few days of indulgence in the prohibited diet was invariably followed by headache.

I will say parenthetically that I have obtained the gratifying results referred to without paying any attention to the question of diet. Lithia water freely taken aids elimination by converting the uric acid and the more insoluble urates into a soluble salt and stimulating the kidneys. Probably the large amount of water usually taken is an important factor.

Since writing what I have on uric acid in hay-fever, I have learned that Leflaive, of Paris, has found uric acid in great quantity just before the attack and half that quantity during the attack. In sick-headache Haig found it as 1 to 40 of urea before and after attacks and 1 to 20 or 25 during attacks. This variance is naturally accounted for by the rapid elimination of uric acid during the violent muscular exertions, profuse sweating, discharge of mucus, etc., during the paroxysm of sneezing. There are no such corresponding exertions and increase of secretions, mucus, sweat, etc., during the headache.

For local treatment patients have found much relief during attacks by using an inhaler, like that

shown in the illustration, which can be carried in the pocket, and contains a 20 per cent. mixture of equal parts by weight of camphor and menthol. It has a more soothing and correcting effect on the nerves and vessels than menthol alone. It does not become irritating, like menthol crystals, after being used for some time. It can be used unnoticed in public places the instant any irritation appears, and thus prevent or cut short attacks. Three or four slow, deep inhalations should be taken from it in one nostril, while the other is closed, until the irritation is relieved. The breath should not pass back through the camenthol inhaler, but out through the mouth instead. To treat the throat and bronchial tubes it should be inhaled through the mouth.

Medical opinions. I have written to a large number of specialists and writers on this subject to obtain their latest views and treatment. There were some whose recent publications made it unnecessary to write, and others who were inaccessible in the very short time allowed (five weeks) for gathering and transmitting this information. So I have in such cases searched the literature, and have endeavored to present a fair and impartial account of the present status of medical opinion on the nature and treatment of hay-fever. From some articles I have been unable to gather any definite knowledge of the opinions of the writers on the nature of the disease, and have stricken out much for that reason, but I have in every case presented striven to give a natural and unbiased interpretation of the author's views. The methods of treatment often indicated these. All titles will be omitted to save space, and the opinion of each writer on the pathology, whether he believes it to be a neurotic or local affection, will be indicated by a single word following his name—*neurosis*, or *local disease*.

It so happened that the first answer received in response to my letters represented the views of a large proportion of conservative surgeons in diseases of the nose and throat so fully that I give it first place in this collection. It was necessary to abbreviate it by omitting the more technical passages. It is from my good neighbor, W. E. CASSELBERRY.

Neurosis. "I believe hay-fever to be amenable to thorough surgical treatment, establishing a complete cure in a minority of cases only, those particularly which present gross deformities of the septum and the turbinates, and polypi. In the large majority the condition can be materially mitigated, the degree of improvement being in accordance, first, with the degree of structural disease present in the nose; and, secondly, with the thoroughness of the treatment. A small minority are not amenable to surgical treatment. They include the highly neurotic individuals in whose noses, between the paroxysms, little or no structural change is apparent. Much can be accomplished toward palliation by both systematic and local medicinal treatment. But in my experience medicinal treatment is nearly, if not quite, powerless to effect a permanent cure. Such, however, may take place in the course of years, perhaps, assisted by supportive and tonic treatment, as the individual's general health improves and the neurotic element lessens. Of local palliative remedies, cocain is probably the most powerful and at the same time the most dangerous remedy. Its use and sale should be regulated by law."

E. L. Shurly. *Neurosis.* "I am very glad that you will present the subject of the treatment of hay-fever. It is a very important one, and does not receive the intellectual attention which it deserves. It is my belief that some cases can be relieved by counter-irritation in almost any part of the body, as well as in the nasal passages. I also believe that its purely nasal origin is overestimated. I have found snuff of daturin with starch sometimes more effective than the galvano-cautery." He uses tincture of iodin, etc., over the neck and chest, as recommended by Faulkner. If there are new growths he removes them.

C. H. Knight. *Neurosis.* Destroys all enlargements. "When it is impossible to define a distinct abnormality, the nasal membrane throughout being sensitive and irritable, good results seem to me to follow painting the mucous membrane with a solution of perchlorid of mercury, muriate of quinin, and glycerite of carbolic acid. Of course, general treatment is always essential. I must confess that my proportion of cures is small. I feel quite pleased if I succeed in mitigating the severity of the symptoms and lessening their duration, etc."

W. C. Glasgow. *Neurosis.* "Surgical treatment has given little or no permanent relief. Symptomatic treatment will ameliorate the symptoms and keep the patients in comparative comfort during attacks. The constitutional treatment with potassium iodid, belladonna, antipyrin, etc., lessens the disturbance and sometimes controls it."

Jonathan Wright. *Neurosis.* "I have seen several cases with no appreciable intra-nasal lesion except the acute condition during the attack. I have operated a few times for intra-nasal lesions of various kinds. All were improved somewhat, some markedly, some slightly. My impression is that the relief in these cases is too limited to make it of value."

R. W. Seiss. *Neurosis.* Operations in the nose should be resorted to cautiously, and only when absolutely necessary. He recommends strychnin and bromids internally, and benzoate of sodium, 10 to 20 grains to the ounce, or menthol, 10 to 30 grains, for a spray.

E. J. Kuh *Neurosis.* A sufferer from hay-asthma. He found the most relief from the following spray: Camphor ½ part, menthol 1 part, creosote 1, oil of eucalyptus 2, oil of pine-needles 2, albolene or benzoinol 93½ parts.

J. O. Roe. *Local.* He believes that there is always a diseased condition of the nose causing hay-fever. These diseased tissues must be removed or destroyed. He denies the neurotic character of the disease. He says: "Irritation reflected from other situations to the nasal chambers is not hay-fever." (Then what is it?)

F. H. Bosworth. *Neurosis.* He believes that intra-nasal surgery affords permanent relief. This method is clear in its indications, easy of accomplishment, and promises not only more immediate but more permanent relief than any other method. He believes that hay-fever and spasmodic asthma are pathologically identical.

J. N. Mackenzie. *Neurosis.* Better results were obtained from constitutional than from local treatment. He gives zinc, nux vomica, quinin, and arsenic.

W. H. Daly. *Local.* He thinks it is simply a deformity in the nose and that a large proportion of cases can be cured by surgical operations.

J. Solis-Cohen. *Neurosis.* Any local nasal trouble may be simply incidental. He prescribes tonic treatment and restricts the use of meat.

H. Gradle. *Neurosis.* He removes any nasal growths.

Kitchen, of New York. *Local.* He believes it is due to the membrane being deficient in the epithelial covering, etc., that calls for local remedies.

B. O. Kinnear. *Neurosis.* He believes it to be due to irritation of the gray matter composing the centers of the fifth, glosso-pharyngeal, the facial nerves, and some of the pneumogastric. He found that treatment addressed to this condition was successful. He used the well-known ice-bags of J. Chapman, of Paris, along the spine between the shoulders, from the fourth cervical to the third dorsal vertebra, to dilate the arterioles of the whole body, thus evenly distributing the circulation and withdrawing the blood from the congested centers. The applications lasted from 60 to 90 minutes, 1 to 3 times a day.

E. F. Ingals. *Neurosis.* About 40 or 50 per cent. of cases may be cured by cauterization. He has modified his views of eight years ago, when he thought that nearly all could be cured by burning. He gives tonics, and cocain locally.

M. R. Brown. *Neurosis.* The supersensitive areas should be destroyed with the cautery. Atropin, $\frac{1}{100}$ grain, once or twice daily, or a 4 per cent. solution of cocain locally may give temporary relief.

H. H. Curtis. *Neurosis.* He sears the enlarged tissues with chromic acid in preference to all other escharotics.

C. E. Sajous. *Neurosis.* He believes that if cauterization fails to cure, it is because it is not carried deeply enough. He uses glacial acetic acid, or nitric acid. He gives strychnin and coca wine after meals.

William Cheatham, of Louisville. *Neurosis.* He praises antipyrin in 10 to 30 grains, also acetanilid, 4 to 6 grains a day.

T. M. Hardie. *Neurosis.* He believes that operations will benefit a large proportion, but constitutional treatment is necessary in most instances.

J. R. Davey. *Neurosis.* He removes enlargements and gives potassium iodid and tonics.

Beverley Robinson. *Neurosis.* He uses soothing applications and constitutional medication. He advises against surgical interference except when there are positively diseased growths.

I. Gluck. *Local.* He believes the nervous element to be a result, instead of the cause, of the disease. He uses a 10 per cent. solution of atropin after anesthetizing with cocain-phenol. He gives aconitin every hour or two, affording relief and aborting attacks in from two to five days.

Carl Seiler. *Neurosis.* He uses sprays of

cocain and plugs of cotton saturated with it. A sponge worn in the nose to filter the air is recommended. Quinin in large doses is advised and tonics and atropin for the fever. In the later stages iodid and bromid of sodium are given. Morphin hypodermatically is advised. All enlargements should be removed; he gives dilute phosphoric acid —30 drops a day.

De Lamalleree. *Neurosis.* He believes it a neurosis of nasal origin, and claims to subdue morbid sensitiveness of the membrane by douches of carbonic acid gases locally for fifteen minutes at a time, three times a day.

Sir Andrew Clark. *Neurosis.* He resorts to constitutional remedies and applies to nostril with a camel's-hair pencil this mixture: 1 ounce each of glycerin and carbolic acid, 1 dram of quinin, and $\frac{1}{2000}$ part of perchlorid of mercury. Heat must be used to dissolve the quinin.

P. McBride. *Neurosis.* He treats it as a nervous disease, and if this fails he uses cocain and the galvano-cautery. He deprecates indiscriminate burning, however.

D. B. Lees. *Neurosis.* He claims to abort it with bromid and belladonna.

Gouguenheim. *Neurosis.* He uses nervines and cocain locally.

The writer of this paper operates with the galvano-cautery or by other methods when there are positive indications for such measures.

The limits of this essay having been reached, all remarks of a generalizing character on this array of medical evidence will be omitted.

DEATH IN THE NILE.[1]

By DR. GREENE PASHA,
OF KNAPHILL, SURREY, ENG.

As blood is the life of man, so the river Nile is the life of Egypt. While the first remains thin and wholesome, circulating freely throughout every organ and member, and capable of self-purification by reason, in a great measure, of its rapid motion, the fortunate possessor enjoys good health; but if from any cause, inherent or acquired, the flow of the vital fluid be retarded, and the faculty of getting rid of effete and poisonous material be thereby interfered with, he will sicken and die.

This is equally true with regard to the river. As long as the current continues sufficiently powerful to sweep away impurities—before there is time for them to develop their lethal properties—the people thrive; but no sooner does stagnation, however brought about, set in, than at once the death-rate becomes an index of the degree of fouling the water has undergone, the extent of the pollution which the current can no longer cope with.

The reason for the annually recurring holocaust in Egypt is writ so plain, that he who runs might read; but such is the power of habit, so inveterate is the apathy attendant on custom, that no attention whatever is paid to a condition of things as disgraceful as it is lamentable. The foul fiend of usage has blinded the eyes of those in whose hands is the remedy, and no one in authority will endeavor to set right what prejudice will not allow him to acknowledge as a wrong.

In Egypt there is no water, potable or the reverse, except the stock supplied by the Nile. There is not a single natural spring in the whole country. So-called springs and wells are fed by infiltration from this wonderful river, which drains a surface as extensive as Russia, and for the last 1200 miles of its course receives no affluent whatever, great or small. A glance at a map of Egypt, as now constituted, will suffice to show that the population is truly riparian; the seven or eight millions of inhabitants all dwell within easy reach of the Nile, including its branches and canals, and nine-tenths of the putrescible filth they produce are cast into its bosom.

This is of course abominable, but the reprehensible practice has now gone on for so long that the desecration of the sacred stream is no longer looked on as a sin by the, in this respect, unworthy descendants of the most hygienic nation of antiquity.[1]

When it is considered that the fall in the bed of the river from Assouan to Cairo is only between two and three inches per mile, and that throughout the Delta even this infinitesimal slope diminishes to less than one inch per mile, it will readily be perceived how easy it must be to bring about stagnation during the low-Nile season. It is the custom at that time to bank up the water in hundreds of impure reaches, for the sake of the crops. The fields must be watered or the revenue could not come in; irrigation has to go on *quand même;* but the current, already well-nigh moribund from natural causes, soon dies outright.

[1] [The author was seven years head of the Egyptian Sanitary Department, and obliged to retire by sudden and total deafness. —Ed. Medical News]

[1] "The ancient Egyptians had two chief gods—Horus and Ammon. The first was usually depicted as the sun; the second was the spirit of the Nile. While worshipping and respecting these gods, as represented in their incarnations, Egypt was supreme and conquered the greater portion of the known world: but in these degenerate days your beautiful country is no longer mistress, and you may seek the reason in the scorn and contempt with which both these deities are treated. The utmost efforts are everywhere made to exclude the life-bestowing sun, and his attendant, air, from dwellings; and no filth is too foul to cast into the great life-sustainer, the sole water-supply of Egypt—the Nile!"

This quotation is taken from a letter written in September, 1890, by the Director of the Egyptian Sanitary Department to the minister who was then, and is still, at the head of affairs. It speaks for itself: and if no extract from the answer be appended, it is for the simple reason that none was received. The document, most probably, was never even read, and no doubt it was promptly consigned to that very capacious receptacle, the ministerial waste-paper basket.

No sooner has this regrettable but under the circumstances inevitable result taken place than the water begins to emit a nauseous smell, and on still days an iridescent scum may be seen covering its surface as though petroleum had been poured upon it.

Vital statistics in Egypt are not so perfect as in Europe or America. The officials of the Sanitary Department do what they can to collate trustworthy records, but they are terribly handicapped for want of a census. In 1882, during Arabi's so-called rebellion, an attempt was made to establish an enumeration of the people, but it was practically mere guesswork; and for all scientific purposes the pretentious volume in which the results are tabulated is absolutely without value.

The rates shown in the accompanying table cannot therefore be accepted as really representing the mortality in the various towns; but the figures serve for the purposes of this paper, as they demonstrate with the utmost clearness the extreme unhealthiness of communities drinking Nile water during the summer, and the relative salubrity of the two towns where alone the people are compelled to store up the pure flood-water in cisterns, or as they are called locally, *sahariqs;* their proximity to the sea rendering the river brackish when its level falls.

The table is almost self-explaining; a few remarks only are necessary to bring out the special points. The four weeks ending about the 2d or 3d of April may be considered the commencement of the low-Nile season, for at the end of the period there is usually very little current left. The river generally begins to rise in the early days of August, but a week or two naturally elapse before any improvement appears in the death-rate. It will be seen that the average mortality for the five years in the ten towns using water direct from the river or canal was in every case higher at the end than at the commencement of the season, the average rate of increase being equal to 53 per cent. Taking the towns, year by year, it appears that this phenomenon was observable forty-two times out of a possible fifty; and it is worthy of remark, though not shown in the table, that in the same towns the deaths exceeded the births during the low-Nile period thirty-eight times in the five years, whereas at Damietta and Rosetta the births were invariably far the higher.

These facts ought to be sufficient to convince most people that the water of the Nile becomes poisonous during the summer. But there is, unfortunately, still stronger evidence. In 1891 a canal on a higher level than the river was opened to Rosetta, and, for the sake of economy, the public *sahariqs* were allowed to remain empty. The con-

TABLE SHOWING THE RELATIVE MORTALITY IN EGYPTIAN TOWNS WITH AND WITHOUT SAHARIQS, TOWARD THE COMMENCEMENT AND AT THE END OF THE LOW-NILE SEASON.

N. B.—The rates are based on the census of 1882, which is notoriously incorrect, but the relative values are trustworthy.

DEATHS PER 1000 PER ANNUM.

Years.	Periods of four weeks ending respectively 22, 21, 19, 18, and 17 April.												Periods of four weeks ending respectively 12, 11, 9, 8, and 7 August.											
	Towns not using Sahariqs.										Towns obliged to use Sahariqs.		Towns not using Sahariqs.										Towns obliged to use Sahariqs.	
	Guisch.	Cairo.	Mansourah.	Alexandria.	Damanhour.	Tantah.	Mehallah.	Chibin.	Zagazig.	Port Said.	Damietta.	Rosetta.	Guisch.	Cairo.	Mansourah.	Alexandria.	Damanhour	Tantah.	Mehallah.	Chibin.	Zagazig.	Port Said.	Damietta.	Rosetta.
1886	58	47	33	46	42	58	26	19	59	22	21	18	54	56	88	62	63	73	77	79	33	54	22	23
1887	44	43	32	44	25	36	33	32	35	42	25	36	47	53	55	45	38	57	30	58	53	36	21	13
1888	62	40	46	38	32	28	27	18	36	21	15	14	58	83	68	59	38	79	43	53	59	48	28	15
1889	42	50	30	56	31	50	25	40	49	26	33	16	70	66	58	53	69	81	50	100	43	80	21	16
1890	45	42	60	40	32	40	41	36	36	29	19	10	53	50	49	46	36	60	42	50	49	40	20	12
Aver.	50.2	44.4	40.2	44.8	32.4	42.4	30.4	29.0	43 0	28.0	22.6	20.6	56.4	61.6	63.6	53.0	48.8	70.0	48.4	68.0	47.4	51.6	22.4	15.8
Rate of *increase* per cent.													12.3	38.7	58 2	18.3	50.6	65.0	59.2	134.5	12.3	84.2	...	...
Rate of *decrease* per cent.													...	...	...	...	...	...	...	...	...	...	0.8	23.3

sequences were simply disastrous. The ancient port, so long renowned as the most salubrious town in Egypt, at once fell from the post of honor, and ever since has occupied a position in the sanitary returns only a little higher than the average. The low-Nile season, which used formerly to be the healthiest part of the year, is now marked by the rise in mortality customary elsewhere; and the fatal influence of the deadly canal is also amply demonstrated by the unprecedented fact that the deaths now habitually exceed the births during the summer.

The reason the annual slaughter excites so little attention is because it is only the children that die. The innocents perish, but the withers of the adults are unwrung. In their infancy they pass through the ordeal, and are now immune to the effects of the poison.

It is as true of nations as of men that in their affairs "there is a tide which, taken at the flood, leads on to fortune." In the lives of peoples there are occasions when the events depending on prompt decision and prudent selection are of such incalculable importance, not so much perhaps to themselves as to their posterity, that vacillation and ignorant action at the critical moment are alike fatal. As a rule, the march of events in a country is a jog-trot affair, allied to the goose-step, and devoid of salient incidents to serve as landmarks for time; but now and again the level sequence of monotonous days is dislocated, and opportunities offer which, if neglected or misused, conduce eventually to ruin.

A crisis of this nature is now at hand in Egypt. It has nothing to do with politics, properly so called. It is not a petty ephemeral question such as the fall of a cabinet, to be invested with exaggerated interest one moment and forgotten the next. On the contrary, it is a real, solid question; one directly affecting hundreds of thousands of lives, and indirectly enormous sums of money. There ought not to be any doubt which of these two things—life or money—is of most importance; and yet it must be admitted that were not filthy lucre mixed up in this matter, there would be but little prospect of its ever attracting aught but an infinitesimal portion of public attention.

The question, shortly, is this. In February, 1894, an International Commission is to meet in Cairo to consider plans that will be submitted to it for increasing the supply of water furnished by the Nile during the three or four months when, its level having fallen, the current almost ceases. To most people this at first sight might appear to be merely a detail connected with irrigation, to be determined by engineers specially trained in that branch of their profession; but though, no doubt, irrigation is a subject of great importance in an arid, rainless climate, still it pales into insignificance before what in reality is the vital point, the very essence of the matter with which the Commission will have to deal.

For the purpose of watering the land in order that crops may grow, any water will suffice; in fact, the fouler it is the better will be the result. But when, at the same time, the drinking-supply of a people is concerned, the question of purity should take precedence of every other consideration.

The projects to be considered by the International Commission are practically two in number. One, which seems to be favored by the powers that be, consists in "ponding up" the river in its own bed at one, two, three, or more places, including, according to Mr. Willcocks, "poor and uninteresting" Philæ. The other project is that of Mr. Cope Whitehouse, in the Raiyan desert.

To a sanitarian the river ponds are absolutely indefensible. In the first place, the pure Abyssinian mountain water would all be allowed to flow through before the ponding-up began. The sluices would not be closed till January in each year, and the slowly-filled ponds would consequently owe their supply to the fever-stricken swamps of Central Africa. During its detention behind the barriers there would be ample time for the countless germs contained in this water to develop and come to maturity, and in this natural process they would receive the assistance of the putrescible matter continually being cast into the stream from Khartum downward.

There is not a single good word to be said in favor of the ponding-up scheme. Were no other plan available, the favored project might be accepted as a *pis aller*—as a palliative better than nothing at all; but it never could be looked on as a remedy for the evils exposed in the preceding remarks. It would be a sign of insanity if a starving man were to deliberately choose a broken fragment when he was offered an entire loaf, and yet this is practically what will be done if the ponding-up project be accepted.

In the Raiyan desert, far from all possibility of contamination, there is a vast hollow where the cream, so to speak, of the Abyssinian flood can be stored till required for use. Then let this be done! In the interests of poor humanity let us see all petty jealousies cast to the winds. Then will Egypt be indeed blessed with the most perfect scheme that has ever been proposed for her rehabilitation. It might, and ought to, have been carried out years ago; but better late than never. The critical moment has arrived, and on the decision of the Commission now depends, not only the prosperity, but the very lives of a hard-working, admirable people.

TREPHINING AS A CURE FOR TRAUMATIC EPILEPSY.[1]

By JOHN T. CHAPMAN, M.D.,
of Bessemer, Ala.

In these days of venturesome exploits in the fields of surgery, no greater boldness is perhaps displayed than when we propose to invade the very domain of thought and trespass upon her territories in search of disease. The temerity concerning the legitimacy of such encroachment has created adverse opinions as to the value of the operation of trephining for the cure of traumatic epilepsy. It is true that the proper knowledge of function-localization, when the operation was performed without success, was a prime factor. I wish to put myself on record that no one should undertake to trephine unless he understands the symptomatic localization of such lesions. It is true that trephining has been employed from the earliest times, and that the dura has been incised in many cases by older surgeons, but not until the nineteenth century has attention been directed to cerebral localization and to certain surgical procedures founded upon the indications that it has afforded. Such operations upon the brain have been conspicuously successful, and have been justly reckoned among the triumphs of modern surgery. When guided by the disclosures of pathology and physiologic experiments, and aided by the application of recognized aseptic laws, operations upon the brain have been devised and successfully executed, which in the immediate past would have been not only impossible but incredible; but it is equally true that these operations are still limited in number and application. The instances in which brain-lesions can be accurately defined and located, and afterward made subjects of operation with success, are comparatively infrequent.

The lesions that are of such nature, so well-defined and outlined, or so situated, in view of the demonstrated localization of brain-functions, that their diagnosis can be made with reasonable certainty, are few enough in the first instance; those that are in reach of the surgeon's knife are fewer still, and those in which the patient ultimately survives constitute but a small portion of the original scanty number. It is not strange, however, that these operations should fascinate by their audacity, and that when successful they should dazzle the modest workers in the more prosaic fields of labor.

It is also possible that the order with which the diagnosis of local lesions of the brain has been pursued, in the light of functional localization, may tend to distract from those general pathologic conditions that are of so much greater frequency.

[1] Read before the Southern Surgical and Gynecological Association, November, 1893.

It is just here that we must recall the property inherent in the cells of the cerebral cortex of manifesting, under the slightest stimulation, the phenomenon of automatonism, and often spontaneously; this is an important biologic condition of the cortex. It explains how contraction of the epileptiform convulsive nature may for a while persistently recur, even though the primary cause that obviously excited the true epileptic paroxysm—such as a piece of depressed bone, a tumor, or a clot—has been wholly removed. Manifestations that at first depend upon the advent of afferent impressions may afterward continue irregularly to emanate almost spontaneously from cortical centers that have been excited, from some eccentric source, to abnormal activity through long-continued, frequently-repeated vehement impressions. Through inter-cortical connection more than one center may participate in radiating the afferent impulses far beyond the special motor area primarily involved; while the primitive diseased focus itself continues to accumulate cell-force that is irregularly, but often paroxysmally, dissipated. Increment of energy doubtless depends upon the very metabolic tissue-changes that have occurred through hyper-nutritive processes in the nerve-substance or nerve-protoplasm, changes that for a period are all-sufficient and quite prone to keep up those automatic explosions. But let us for a moment suppose these automatic centers separated or cut adrift from all afferent influences; then, the usual source of normal stimulation being removed, all excitor-reflex expressions will wane away into undulation, slowly diminishing in frequency and vehemence until, coming gradually to a standstill, they gradually disappear.

Now from this physiologic view of the spontaneous intrinsic life-history of the brain, I feel prepared to maintain that when no disorganization of the cortex has yet taken place, surgical interference at the seat of injury with the trephine-elevator, or rongeur forceps, must assuredly cure the patient, as we release the cortex from all direct or threatening source of irritation. Let no recurrence of convulsive attacks particularly disconcert us; even should these nerve-symptoms continue for awhile, nay, even for a year, diminishing in intensity, experience has more than once shown that we may often look forward to a cure, but frequently still to amelioration of the symptoms in the nature of the paroxysm. I believe that if the record of cases of trephining for the cure of traumatic epilepsy were postponed until time rectified our misconception respecting them, we should realize more frequently the accuracy of this assertion. D. Hayes Agnew, in an article on the "Present Status of Brain-surgery," concurred with Mr. Horsley, that it was not proper to call a patient cured until five years after operation. This is just; but Agnew further adds that traumatic epilepsy is practically incurable

by surgery, and that a considerable number of such cases had better be relegated to the domain of medicine. Is it a wonder that we should hesitate to enter the domain of thought and trespass on her territory in search of disease when we have such authority relegating it to the domain of medicine? And yet, in spite of this, clinical experience has taught us otherwise.

Since the advent of aseptic methods, trephining may be regarded with less apprehension by the timid. Its propriety may now be decided simply in view of its probable advantage, or its more probable futility. It may be counted quite as safe as the use of the exploring needle in suspected abscesses, and safer than exploratory celiotomy. So far as subsequent danger or inconvenience from hernia cerebri is concerned, I may report with Horsley that in the surgery of to-day it has ceased to be an intimidation to the surgeon.

I believe this operation should be performed in every case of depressed fracture, when elevation and thorough exploration cannot otherwise be accomplished. It is doubtful if such operations (unless from want of proper knowledge of cerebral localization) have been known to do harm when they have failed to do good. It is certain that harm has come in more than one instance, when, because of general symptoms, operation has been neglected. It is impossible in recent brain-lesions to say what extensive comminution of the internal table may not exist. It is the possibility of the smallest bony spicula penetrating the brain and causing serious nervous disturbances in the indefinite future that demands the thorough examination of every cranial fracture. It should be held obligatory on precisely the same ground as the examination and cleansing of the external soft parts. The observance of such precaution is free from danger; its neglect may lead to either present or future serious complications.

We are prepared, then, to say that, in interfering surgically for the relief of epilepsy, we have encountered no peripheral source of trouble in any morbid condition that has confronted us. It is our duty from present enlightenment on the subject to determine, if possible, the brain-territory that disease oppresses, and to reach the disease before we hasten to declare that the trephine has discovered no disease, and proved powerless to relieve. A question aptly suggestive in this connection at once arises, whether indeed bold invasion of the diseased or supposed diseased province of the brain itself should constitute a legitimate step of the operation? If we are not to stop short of the successful fulfilment that the operation proposes, I unhesitatingly reply in the affirmative, of course qualifying this answer by an assurance that the distressed centers have been satisfactorily ascertained by the symptoms present and by application of electrodes with proper precaution. It is true that the procedure has not always been satisfactory, but it seems to be the rational course. One of the most impressive illustrations of what I have tried to show, trephining as a cure for traumatic epilepsy, is a case reported by Michael. I cannot forbear detailing this case.

More than forty years ago a lad of fourteen years of age, living at Charlotte, N. C., was kicked by a horse on the right side of the forehead, remaining unconscious several days; the frontal bone was fractured and depressed, and escape of pieces of bone kept the wound open for one year; cephalalgia interrupted his collegiate course, which he ultimately completed. Convulsions declared themselves later on, daily augmenting until his memory and general health became sensibly impaired. The fits, in number and violence, were so great that on one occasion he fell out of bed and dislocated his shoulder. He was operated on, an inch-and-a-half button of bone being removed at the seat of the injury. It presented on its cerebral surface an osteophyte an inch in length, adherent to the dura, which, when raised, exposed a visibly large absence of brain-substance involving the supra-frontal, mid-frontal, and sub-frontal gyri. Convulsions occurred the day after operation, and were repeated with singular vehemence for weeks. The tormenting headaches and mental decadence seemed ameliorated, however, though for months afterward epileptic attacks hopelessly depressed him. This operation was performed in 1855. The boy returned to his home eight years afterward. Michael, unexpectedly saw him again while he was serving, completely relieved, in the ranks as a private soldier and undergoing all the hardships of the tented field.

I operated on a boy, fourteen years old, who some three years previously received an injury of the head by a blow fracturing the parietal bones; three weeks after the injury he began to have epileptic convulsions; at the time I saw him the convulsions had become more frequent and more violent; the day before operation he had six such seizures. Two buttons of bone were removed at the seat of injury; there was considerable pressure from depressed bone; the membranes were hard and indurated. The indurations were cut out and the edges of the dura brought together by continuous catgut suture; drainage and dressing were aseptic. The wound healed almost by first intention. For two months after the operation the boy continued to have convulsive seizures, but they gradually decreased until they stopped four years and a half ago. He is now eighteen and a half years old, weighs one hundred and seventy pounds, and is working in a foundry where the temperature ranges from 110° to 120° F.

In conclusion, let me add that the doctrine that depressed fracture of the skull without symptoms requires no operative interference, a doctrine which in the past has been deeply rooted in the professional mind, I hold to be responsible for many, very many,

of the unfortunate sequels of head-injuries. However small may be the depression that follows a fracture of the cranium, save in one or two locations, it will encroach enough upon the dura to cause more or less irritation; though insufficient at first, and not at all recognizable to the consciousness of the patient, yet eventually that irritation will be propagated to the meninges and ganglia until finally the paroxysmal explosion occurs, and then, even when the initial lesion is removed, the slowly-established habit created by years of excitation will for some time remain. No amount of foresight can determine what will happen to the inside of the skull after the reception of an injury, from inspection of its exterior surface, the physiologic properties of the two being so very unlike. Whenever, therefore, in my judgment, the profession can accept the doctrine that all depressed fractures of the cranium, however slight may be the depression, are, entirely independent of pressure-symptoms, proper subjects for trephining, then will traumatic epilepsy largely disappear from the list of surgical diseases.

SOME INDICATIONS FOR AMPUTATION OF THE LEG.

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In presenting the subject of amputation of the leg, I do not desire to convey the impression that I consider what I am about to say as in any degree essentially new, but rather to emphasize certain indications that seem to call for amputations of the leg other than those most commonly found in works on surgery.

1. I consider any injury to the foot, so severe as to permit only of a Pirogoff, a Symes, or a Chopart amputation, to be an indication for amputation of the leg in the lower third.

2. Tuberculosis of the tarsal bones, except in children, should, with few exceptions, be regarded as an indication for amputation of the leg in the lower or middle third.

3. Those extensive wounds and burns of the soft parts in which large portions of the integument and soft parts are destroyed, leaving the bone covered only by an extensive and tender cicatrix, demand amputation.

4. Senile gangrene of the toe or foot demands amputation of the leg or thigh above the bifurcation of the popliteal artery.

5. Shock, dependent upon a severe injury to the leg, when it is obviously impossible to save the limb, should, if reaction do not take place in a short time, be an indication for immediate amputation.

The first indication, that in which a Pirogoff, a Symes, or a Chopart amputation might be performed, is one which has been forcing itself upon the profession with increasing strength from year to year.

The destruction of the arch of the foot, the uncertainty of obtaining useful stumps, the inability satisfactorily to adjust mechanical substitutes for the portion lost after either of these operations, seem to me to justify our recommending an amputation at this time, rather than to be obliged to see our patient forced to rely upon crutches, unsatisfactory and awkward substitutes for the foot, and most likely to undergo an amputation before he can have fitted a limb at all useful or comfortable.

That amputation for suppurating tuberculous disease of the tarsal bones in adults will not be accepted by a great many as an indication for amputation of the leg, I am well aware, and yet the treatment of this disease has been so uniformly unsatisfactory that I believe it should be considered an indication in most cases for amputation, rather than to allow the patient to continue with a practically useless foot, or to run the well-established risk of general tuberculous infection.

We have all, perhaps, seen those extensive wounds of the soft parts of the leg and foot in which cicatrization has been eventually complete, and yet in which, owing to extreme sensitiveness, or to the repeated occurrence of large and intractable ulcerative processes, amputation has been rendered necessary after years of suffering, or of disability. In those cases in which we can foresee such a result, we should not let the importunities of the patient to save his leg blind us to the ultimate consequences, or to the propriety of advising amputation, and then allowing the patient to take upon himself the responsibility of the future. I am well aware that I am trespassing upon debatable ground when I advocate amputation of the leg above the bifurcation of the popliteal artery in senile gangrene below that point, but I feel sure that by its early performance the patient has a better cha ce for life and usefulness, suffers less pain, and runs less risk of septic poisoning than by that method that tells us to fold our hands and wait for the line of demarcation to form.

It is doubtful whether my last indication for amputation should technically be enumerated here, but what I wished particularly to call attention to was, that a patient suffering from severe shock as the result of a crush of the foot or leg, and who fails to react satisfactorily after not to exceed half an hour of intelligent efforts directed toward restoring the circulation and body-heat, will, if he be not in a moribund condition, stand a better chance of recovery with an immediate amputation than by delay. Reaction will not be delayed by the operation, but the continued presence of a crushed and mangled limb will rather tend to perpetuate shock and render

sapremia and septicemia more probable than a prompt and bloodless removal of the part

In presenting for consideration these indications for amputation, I have, for various reasons, purposely avoided referring to statistical evidence. Statistics, especially medical and surgical statistics, are capable of so many op osite interpretations, that they are often not only capable of carrying erroneous impressions, but may be absolutely dangerous. Nor have I related cases illustrative of the various propositions stated, though I have considerable material for such illustration. I have rather preferred to state them briefly as the result of my clinical experience, satisfied that had I appreciated them fully at an earlier date I might have saved much suffering, and I believe a few lives.

I trust that if any feel called upon to criticise these indications they will do so, using as a base their clinical experience, and not statistical compilations.

ORIGINAL LECTURE.

CONGENITAL PTOSIS—TRAUMATIC PARALYSIS OF THE LEG—NEURITIS FOLLOWING INFLUENZA—SPASM OF MUSCLES OF THE FOREARM, WITH TROPHIC CHANGES.

By HAROLD N. MOYER, M.D,
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PTOSIS PALPEBRÆ SUPERIORIS CONGENITA.

THE patient presented to you to-day shows a most striking deformity. As you look at his face you notice that the upper lid of the right eye droops, so as to conceal almost the whole of the iris. The little fellow is but eighteen months old, and is, as you see, remarkably strong and well developed for his age. The mother tells us that he is her fourth baby, and that her confinement was easy, labor lasting but one hour; a midwife was present, and no instruments were used; the head presented.

Immediately after the birth of the child it was noticed that the right upper eyelid drooped so as to cover the pupil. The mother states that the child has always been well, never having had any of the usual children's diseases. Inquiry into the family history shows no trace of hereditary disease. The father denies venereal infection. It is apparent that both parents are exceptionally healthy and robust people.

The patient resists so strongly that it is quite difficult for us to expose the iris in such a way that we can observe both eyes. Of course, without the assistance of the patient it is difficult to say that they are parallel, but they appear to be so. The pupils react quickly to light and accommodate to distance. It is apparent, therefore, that we have here only a paralysis of that branch of the third nerve supplying the levator palpebræ.

This is one of the congenital third-nerve paralyses, which, while they are not common, are still referred to in all standard text-books on nervous diseases and ophthalmology. It is peculiar in this case that the disease is unilateral, and that it involves but one branch of the superior division of the third nerve, that which passes to the levator, while the portion that supplies the superior rectus has entirely escaped. In all former cases of congenital ptosis that have here come under our observation, the disease has been bilateral, and there has usually been some involvement of other branches of the nerve, with consequent squint. Unilateral cases of this disorder, in which the eyelid would rise when the mouth was opened, have been reported by Helferich, Gunn, and Bernhardt. In the case reported by Gunn, it it was not only necessary to open the mouth, but also to carry it a little to the right.

So far as our present knowledge goes, we know nothing of the nature of this affection. It may be due to pressure upon the nerve during the birth of the child, or to some imperfection in the nervous apparatus, or perhaps to absence of the levator muscle. Whatever its cause, we must look to operation for its relief, and this consists in removal of a portion of the integument from the upper lid so as to shorten it so that the natural position of the eye is open, but the orbicularis is still able to close the eye. A later operation, and one quite popular, is to pass threads beneath the skin and bring them out above the eyebrow. In this way artificial bands of connective tissue are formed so that pulling the brow upward moves the lid.

TRAUMATIC PARALYSIS OF THE LEG.

The patient before you came into the room on a pair of crutches, with the left leg supported by a strap caught under the heel of the left shoe, and across the front of the thigh. He states that he is thirty years of age, and by occupation a railroad conductor. The family history is good, and prior to the accident the man's health has always been good. Venereal infection is denied.

The accident in which he was injured took place some four months ago. The car in which he was riding was thrown down an embankment some ten or fourteen feet, and he was precipitated with great violence toward the opposite side of the car. He does not know just how he struck. He thinks that he did not lose consciousnes, but was not able to move or speak. He was immediately given some whiskey, which made him cough, and this brought up some blood. After about an hour he seemed to gain a certain control of himself, and then began to experience very severe pain across the small of the back. This has continued until the present time, though it has been getting better, and it now rarely annoys him, except when he wrenches the back in some way. He remained in substantially the same condition until removed to a hospital, where it was necessary to draw his urine with a catheter, and clysters were used to move the bowels. It was noted at that time that his left leg was cold, and hot bottles were placed about it. These were too warm, and the leg was blistered without his knowledge, as sensation was completely abolished in the part. There has been some improvement in his general condition. The pain has to a great extent disappeared, and he is now able to go about on a pair of crutches, but since the accident he has never had the slightest voluntary use of the left leg. Two weeks after the injury he was able to pass water. His general health is now good.

Examination does not show the slightest deformity of the back, pelvis, or thighs. There is complete loss of sensation from a line drawn parallel with and about two inches below Poupart's ligament in front and two inches below the gluteal fold behind. Below this the senses of pain, touch, pressure, and temperature, are absolutely lost. The leg is blue and cold to the touch, and pits slightly on pressure. The patellar tendon-reflex is exaggerated in both legs, but there is no ankle-clonus. There were no ocular or oral symptoms, and motility and sensation of the upper extremities are normal. The reaction to the faradic current was slower, and required about twice the coil-distance to produce a muscular movement on the left side that was needed on the right. No galvanic reactions could be obtained in the left leg. In the right leg, C.C.C. 5.5, A.C.C. 7.5 milliampères, with about a normal faradic irritability.

As to the nature of this injury, we can only think of a hemorrhage into the spinal canal or into the cauda equina. There is one anomaly in the symptom-grouping that is found in the presence of the deep reflexes associated with trophic disturbance and the reaction of degeneration. This would almost seem to exclude the hemorrhage or other lesion of the cauda. If we assume that the lesion is in the cord, we are met with the fact that sensation and motion are both paralyzed, which would imply that the difficulty affected both sides of the cord. Perhaps in lesions of the lumbar cord there are sections in which the sensory and motor paths are associated on the same side of the cord. In any event, the retention of the deep reflexes in such a case cannot be explained by the ordinary views of the anatomy of the lower portion of the spinal cord.

NEURITIS FOLLOWING INFLUENZA; NEURASTHENIA; IRRITABLE PROSTATE.

This man is thirty years of age, has been married for six years, and has no children. Eleven years ago he contracted syphilis. He was perfectly well until the winter of 1890, when he had an attack of influenza that left him with a pain which is described by him as most severe at the lower portion of the sternum, radiating from this part downward and to the left, to a point some two inches below the left nipple. The pain was very severe at first, and as it was thought to have some connection with the specific trouble, he was given mercury with iodids. This relieved the pain, and he was free from it for about one year, after which it returned, and it has persisted with greater or less severity ever since. With the return of the pain specific treatment was again employed, but it failed to give relief. The pain varies somewhat in severity; at times it is very sharp, but he says that a dull ache is always present in the part. It is aggravated by deep breathing and by pressure.

The general condition of the patient seems to be fair though he is of markedly nervous temperament. His bowels are regular, appetite is fair, and sleep good. As he stands with eyes closed and feet together, there is a marked tremor of the upper eyelids. The deep reflexes are a trifle exaggerated, both of which symptoms are commonly present in neurasthenia. There are no other general nervous symptoms. On the anterior aspect of the left side of the chest there is an area of anesthesia corresponding with the distribution of the seventh and eighth intercostal nerves. Carefully palpating the intercostal space with the rubber tip of a lead-pencil reveals two tender points in the course of the seventh nerve, and one in the course of the eighth. We think from these symptoms that we are justified in making a diagnosis of intercostal neuralgia, probably dependent upon neuritis which came on at the time he had the influenza, and which is in no way connected with the specific trouble. It is well to remember that while this pain may be due to neuritis, it is found in a marked neurasthenic, one of a class of patients especially liable to pains without organic changes in the nerves.

In addition to these other symptoms, the man complains of occasional pain in the head of the penis, radiating to the root of the organ. The urine, which is passed freely, contains a few clap-threads (Ripper-fäden). There is no disturbance in micturition. Exploration with olive-tipped sounds does not show any narrowing of the canal, but sensitive points are found at the neck of the bladder, and one or two inches in front of it. Rectal exploration shows the prostate to be of normal size, but very sensitive. The absence of organic changes in the urethra and prostate leads us to regard these conditions as a local expression of the general neurasthenic state. While we are confident that with a healthier nervous system there would have been no local disturbance at the neck of the bladder, we shall not neglect the latter in our treatment, but will use a mild injection of nitrate of silver (2 per cent.) in the deep urethra. We shall expect this treatment to favorably influence the local symptoms. The constant galvanic current will be applied to the intercostal nerves with the positive pole over the terminations of the nerves and the negative between the shoulder-blades. From eight to twelve milliampères will be used for about ten minutes each day. The current will be turned on and off slowly, and all interruptions avoided. Strychnin will be employed internally in doses sufficient to produce its full physiologic effect.

SPASM OF MUSCLES OF THE FOREARM, WITH TROPHIC CHANGES; TREMOR OF THE TONGUE.

This patient is thirty-four years of age, a machinist by occupation, married for the past eight years, and has four healthy children. Fourteen years ago he contracted syphilis—at least he had a chancre which was followed by a suppurating bubo. He does not think that he had an eruption on the skin, but states that he had falling out of the hair some weeks after the primary sore. From that time until six months ago he had perfect health, was then working at his trade, and was employed eighteen hours a day, when he noticed a twitching in the throat and some impairment of speech. His physician regarded these symptoms as being due to bulbar paralysis of specific origin, and gave him potassium iodid, under which treatment the symptoms improved, though he did not entirely recover. Some two months ago he was seized with violent contractions of the muscles of the left forearm. These continued to grow rapidly worse until the present time. They were not attended by pain, and the patient has been able to continue at his work until within a few days, since which time a severe inflammation of the metacarpo-phalangeal articulations of the first and second fingers has developed. The constant move-

ment of these joints by the spasms in the muscles causes much suffering, but aside from this there has been no pain.

His present condition is good, his appetite excellent, the bowels regular, and the urinary system normal. There is no incoördination nor any subjective sense of vertigo. He stands easily with eyes closed; when in this position the upper lids are tremulous. The deep reflexes are slightly exaggerated. The pupillary reactions, fundus oculi, and fields of vision are normal. Hearing is equally good upon both sides. There is no pain in the head, and sleep has been good throughout the whole course of the disease. At no time has there been elevation of temperature. The tactile, common, and thermic senses are normal over the entire surface of the body. A careful comparison of the forearms in this respect does not show the slightest difference. The contractions are confined to the left forearm, and while there is marked loss of strength, there is still some movement in the affected fingers. It seems as though the little and ring fingers were capable of more extended movement than the others. The skin of the fingers has a decidedly shiny appearance due to trophic changes. There is no apparent diminution in the size of the muscles, though there is a loss of strength on voluntary movement. Owing to the constant agitation the electric reactions of the forearm cannot be obtained.

It is apparent that we have an irritative lesion in this case, but its exact location is a matter of some question. A cortical lesion is suggested by the limited extent of the lesion, but against this view are the trophic disturbances and the absence of all symptoms of meningeal irritation. The limited extent of the lesion militates against the view that it is located at the base, along the great conducting paths in the peduncles, pons, and medulla. On the other hand, the trophic changes are suggestive of spinal or peripheral nerve-disturbance. In view of the singular grouping of symptoms, we feel that it would be hazardous to venture a local diagnosis at this time. The most that we can say is, that there is an irritative lesion somewhere along the motor tract to the left forearm, and that it is probably of specific origin. We shall recommend that he be put on very large doses of potassium iodid, from 100 to 200 grains daily, and that he report at the end of a week.

CLINICAL MEMORANDA.

TETANUS COMPLICATING VACCINIA.

By S. W. S. TOMS, Ph.G, M.D.,
of Bellport, L. I;
late House Surgeon, Buffalo General Hospital.

On November 6, 1893, I was requested to vaccinate M. D. W., a female white child, five years and five months of age, of American birth and parentage, and apparently healthy. The father is living, and healthy. The mother has two children, and has had one five months' miscarriage. She is of a strumous diathesis, and has had suppurative cervical adenitis. A second sister, aged about sixteen years, is living and in good health. The mother had scarcely made a tedious recovery from a five months' spontaneous abortion, when she again became pregnant. She was in a poor state of health throughout the entire period of gestation, having been subject to some severe trials and afflictions and emotional shocks. The child consequently started life handicapped, developed a neurotic temperament, and was the subject of a strumous diathesis, weak vitality, and poor nutritive functions, slight ailments always profoundly affecting her. Two years ago she had measles, followed by mumps, and although both attacks were light she had a strumous keratitis developed upon a preëxisting conjunctivitis. She suffered from exacerbations of chronic nasal catarrh and dyspeptic attacks. She was much pampered by her parents, who over-dressed her and indulged her in every whim. When in good health she was bright and vivacious, although a delicate child. On November 6, 1893, I vaccinated the child with a fresh ivory-point of bovine virus, using alcohol and a clean towel in preparation of the field of inoculation. The tenotome, with which I scarified the skin of the left arm at the insertion of the deltoid muscle, fifty millimeters square, was sterilized. The slightest scarification possible were made, and the point, moistened with water, from a driven well, was gently rubbed in, covered by a small piece of Lister's green protective and bandaged. This very slight operation produced great pallor, and the child almost fainted. I mention these minute details for reasons obvious that will appear.

I directed the mother not to disturb the bandage for several days; to use a simple dressing of vaselin, and to keep the ulcer free from accumulating pus by weak carbolized washings; and should there be any severe cellulitis, to bathe the inflamed area with aqua hamamelis. I cautioned against allowing the vaselin used to be employed for any other domestic purpose, and to use nothing but *clean* linen or muslin rags; and should anything require my professional attention to advise me accordingly.

I was informed on my second visit, November 24th, just eighteen days from the date of vaccination (when I was requested to call because the sore was not doing well), that my directions had been carried out. The vaselin had been taken from a partly used bottle into which those who had made use of it dipped their fingers. A quantity for this special purpose had been set aside on an individual butter-dish, uncovered, on a shelf in a cupboard. I found the child slightly indisposed, with a temperature of about 100.5°, with the tongue slightly coated; she was not inclined to eat, and had sluggish bowels. The arm was not swollen or discolored to any extent. The ulcer was about the size of a silver fifty-cent piece, deep, and containing a quantity of sanious pus of a very fetid odor. I examined the axilla, but no nodes were perceptible, nor did the child complain of tenderness at this point or around the sore. I inquired into the history since vaccination, and was informed that four days after I inoculated the arm it was inspected. Slight redness existed at the site of scarification, and there was a vesicle in process of formation. The surrounding parts were bathed and rubbed with witch-hazel water, and the protective and bandage were reapplied.

During the latter part of the second week the slough was complete. At no time had there been much disturbance; the cellulitis was insignificant, and the child was out playing every day. For a few days previous to my second visit there appeared an offensive odor, and

the pus was more abundant, although the child did not give evidence of any aggravation of the local trouble. The ulcer was full of pus; it had not been dressed since the evening before, awaiting my visit. There was nothing in its appearance to arouse suspicion. The ulcer was deep and the granulations were unhealthy, because of the indolent character they presented, and induration existed around the edges for a distance of about 1 cm. It had been cleansed by using a sponge and 4 c.c. of carbolic acid to 500 c.c. of warm water. The vaselin was said to have irritated the part where it had been applied to the edges to prevent the dressings adhering, and had been discontinued for a week or more. The witch-hazel water was used for bathing the parts, and the wound was dressed twice daily. I prescribed calomel in 0.015 doses every hour, until a stool should take place, to be followed by oleum ricini or Rochelle salts; to employ 4 c.c. of carbolic acid to 250 c.c. of boiled water instead of 500 c.c., as had been used; to discard the use of the sponge and employ a syringe or irrigator, and to moisten the dressings in the same solution, and to use balsam of Peru after the ulcer had been thoroughly cleansed. The vaselin was not used further.

I was informed that under this treatment immediate improvement was perceptible. The odor and the pus did not reappear. The dressing only required changing once daily. The bowels responded, appetite returned, and the child felt reasonably well. The size of the ulcer diminished, and what little induration existed around the margin disappeared entirely, and the granulations immediately assumed a healthy character.

On November 30th, the father took the child out for a walk, and when near the bay, a stiff breeze blowing at the time, she complained of a sharp pain in her throat on the right side, just posterior to the angle of the jaw. When she returned home the mouth was examined, and a number of small aphthous ulcerations on the margins of the tongue and lips were noticed. I was requested to call and see her. I found the child with a slight stomatitis and the aphthous patches mentioned. The tongue had a dark-gray coating. The pulse was 96, and the temperature 100.5°. The bowels were constipated, and the appetite fair up to that day. I wished to examine the throat, and on depressing the base of the tongue with the handle of a spoon (the child could not separate the jaws more than 75 mm.), she would close her mouth and bite on the handle, holding it for a few seconds quite firmly. I made three attempts with a like result, and abandoned further efforts, as the child was peevish. This trismus was characteristic; but as it often happens in such examinations with children, I attached no importance to the occurrence.

I prescribed a simple antiseptic astringent mouth-wash, also advising the extraction of a number of ragged decayed teeth, as there was occasionally some pain in the throat radiating from the angles of the jaws, and the left cheek and upper lip were slightly swollen. Providing she had fever, she was to be sponged with tepid water and alcohol until remission occurred. This was done once or twice, free diaphoresis following. On my visit next morning I found the patient about the same, with possibly more trouble in the throat, of which complaint was made on swallowing. The girl had not been taken to a dentist. There had been periods of depression and restlessness, and the child had taken only liquid nourishment and wished to drink frequently, which was allowed as much to cleanse the mouth as on general principles, as it was almost impossible for the parents to get her to use the mouth-wash to any effect. She talked freely, and most of the time seemed bright, but was apprehensive and wanted to be held in the lap. Occasionally, after sleeping, she would have slight strangling attacks from the accumulated mucus in the throat, which seemed to excite trismus, for she had difficulty in expelling it. Biniodid of mercury, 0.00065, was given every hour for "sore-throat"; also a mixture containing sodii bromidum and chloral, 0.24 of each to a dose.

I saw her again early on December 2d, still finding the symptoms about as before, together with some rigidity in the muscles of neck, and pains complained of in the back. The latter I attributed to her position, as she was almost constantly held in the lap. Although the child's general condition did not improve, she was less restless. The bowels were constipated, and calomel in 0.015 doses hourly was ordered until a stool was induced. She also had retention or suppression of urine, only urinating twice in twenty-four hours and indiminished quantity. The arm was examined each day and appeared healthy, not sore or inflamed; the temperature and pulse were normal. In the evening I was hurriedly summoned, as the child "had spit some blood" in one of her strangling or coughing attempts to expel the accumulated mucus from the throat. This was no doubt due to an injury to the tongue from trismus. The aphthæ seemed to be getting worse, and all attempts at using the mouth-wash with a swab excited trismus. In fact, the muscles of the jaws seemed to be in slight tonic spasm, as the girl was unable to separate her jaws more than from 60 mm. to 70 mm.; yet she conversed freely and drank her broth and milk up to this time quite readily. At midnight I was again called and informed that she had had a convulsion—"became stiff, did not breathe, and bent backward." This lasted "about a half-minute." When I arrived at the house she was resting quietly. She had not had any of the antispasmodic mixture since the previous afternoon. Although she sat up in bed, drank some broth and talked, and afterward relapsed into a quiet sleep, she could not be induced to take the medicine or use the mouth-wash. I remained until 2.30 A.M., leaving a bottle of chloroform to be used in case of further convulsions. What I had been apprehending for thirty-six hours I now became convinced was true, and I determined in the morning to suggest counsel, which I did; when I was called at 8.30 A.M., with the intelligence that she had had three more convulsions, but of slighter character—the anesthetic being promptly brought into use.

At noon of December 4th I met in consultation Dr. A. H. Terry, of Patchogue. During our examination the child had a typical paroxysm with opisthotonos, and deep anesthesia failed to separate her jaws. The grave prognosis I gave early in the day was confirmed by my confrère. The plan of treatment agreed upon was bromid and chloral per rectum, nutritive enemata, ice-bags to the spine, and chloroform when necessary to control the spasms. The paroxysms were clonic. The girl lapsed into coma from the time the anesthetic was administered; at the time of which she also received a

nutritive enema with the antispasmodic mixture, combined with tr. opii deod., gtt. x, and every three hours subsequently. While under the influence of these she was perfectly free from convulsions, even her jaw relaxing to its full extent, allowing the nurse to swab out the buccal cavity, which was not possible before.

In the morning I had detected cooing and mucous râles at the left base posteriorly. This unfavorable sign rapidly advanced and soon appeared as well in the right lung, and although she subsequently had only six more very slight convulsions she died from edema of the lungs on the next morning, December 5th, at 10.45. She had eleven distinct and characteristic convulsions, four of which were moderately severe, but lasting less than thirty seconds.

Although the course of the disease was short, its essential characteristics answered perfectly to the description given by Watson:

"During the fits of exacerbation the aspect of the sufferer is often frightful. The forehead is corrugated and the brow is knit, the orbicularis muscle of the eye rigid, the eyeball motionless and staring, the nostril spread, the corners of the mouth drawn back, the set teeth exposed, and all the features fixed in a ghastly grin—the true *risus sardonicus*. The tongue is apt to get between the teeth and be severely bitten. All the contractions are attended with intense pain."[1]

At the time of death the ulcer on the arm was not larger than a silver quarter of a dollar, was superficial, without tenderness or discoloration of the surrounding skin, or induration. Pus was slight, granulations were healthy; there was no cellulitis in the arm, nor were the axillary glands enlarged. Several hours before death the face became "bloated," the eyelids and lips much swollen, the jaw relaxing and the mouth open, while the purulent discharge drained along the dependent track of the buccal cavity and angle of the mouth quite profusely. The face soon after death rapidly assumed the natural features; the emphysema (?) entirely disappeared. Cutaneous discoloration from blood-stasis in the superficial circulation was marked in the dependent portions of the body, and rigor mortis was well advanced in less than one hour after death.

From the fact that this fatal case of tetanus has created a grave suspicion in the minds of a large number of people generally[2] and a deep prejudice in the locality against vaccination, I undertook to collect statistics from various sources. I wrote to the managers of the vaccine farm—one of the largest, most reputable, and scientifically conducted establishments in the world; and one in which thousands of the best physicians have unqualified confidence, besides being, perhaps, the largest producer of vaccine on the continent—and was informed that they had never had a case reported to them from the millions of points they had sold, nor had they heard of a case of tetanus from vaccination.

I also wrote to Dr. Cyrus Edson, Health Commissioner of the city of New York, and Surgeon-General George M. Sternberg, U. S. A. Replies from these gentlemen and from Dr. J. S. Billings, of the Army Medical Library, are reproduced. Besides these I have to state that I am greatly indebted to the courtesy of Dr. Judson C. Smith, of the Pathological Laboratory of the New York Post-Graduate Medical School and Hospital, who endeavored to make cultures from some of the pus and part of the tissue taken at time of death from the vaccination ulcer on the arm, *with negative results*. Efforts were made to obtain cultures from the point used for inoculation, and this also without success.[1]

[1] Prac. of Phys., Lect. xxxii.

[2] Several distorted articles appeared in the New York City papers, particularly in the New York *Sun* of December 9, 1893—only another evidence of the utter inability of the lay mind to correctly state facts or describe a scientific subject devoid of sensationalism. Also, an article appearing in the Suffolk Co. (N. Y.) *Argus* of January 6, 1894, emanating from a homeopathic physician of a neighboring town, stating that death was "lockjaw caused by vaccination," and denouncing in unmeasured terms vaccination and the statute that makes it compulsory.

[1] D. Cyrus Edson, of New York, wrote: "During my services in this department I have supervised the performance of over one million vaccinations; among all these cases not a single instance of tetanus has occurred. I believe that the disease is endemic in the eastern part of Long Island, and possibly as near us as Bellport. I should consider an abrasion of any kind in the locality I have named a dangerous thing. For this reason it is very unjust to blame vaccination for the circumstance."

Dr. George M. Sternberg, Surgeon-General, wrote as follows: "I do not know of any case of tetanus having occurred as a complication of vaccination, but I will refer to Dr. Billings, who has charge of the Army Medical Library, requesting him to have the literature of the subject looked up. As your case occurred four weeks after the vaccination, I agree with you in believing that it was a secondary infection, for which you were in no way responsible."

Dr. J. S. Billings, Surgeon U. S. A., wrote as follows: "I enclose herewith a memorandum of six cases of tetanus following vaccination, which are all I find recorded under that heading. You will see that they were all secondary infections:

"CASE I.—Dr. W. T. C. Bates, *Transactions of South Carolina Medical Association*, 1882, page 105. Mulatto boy, aged five years; vaccinated February 9, 1882, with humanized virus. Tetanic symptoms supervened March 8th. No other cause than vaccination found. Boy lived fifteen days.

"CASE II.—Dr. R. Carcia Rijo, *Cronica Medico-Quirurgica de la Habana*, 1886, vol. ii, page 388. White child, two years old; vaccinated in April, 1886; characteristic tetanus appeared in latter part of May. No lesion beyond vaccination found. Death followed on fourth day.

"CASE III.—Dr. George Ross, *The Southern Clinic*, 1878 79, vol. i, page 468. Boy, three and one-half years old; vaccinated, tetanus supervening three weeks afterward, with death on the third day. No other lesion beyond vaccination.

"CASE IV.—Dr Theodore Dimon, *St. Louis Courier of Medicine*, 1882, vol. vii, page 310. Boy, nine years old, vaccinated January 6, 1882; bovine virus. Tetanus set in January 27th; no cause discovered except from vaccination, which was followed by an irregular-shaped ulcer Boy died on tenth day.

"CASE V.—Dr. Joseph B. Cottman, *New Orleans Medical and Surgical Journal*, 1854–55, vol. ii, page 783. Negress affected with tetanus following vaccination; period of time not stated. Recovery in two weeks by the use of large doses of opium.

"CASE VI.—Dr. H. J. Berkeley, *Maryland Medical Journal*, 1882, vol. ix, page 244. Healthy man, forty years old, vaccinated in middle of January, 1882. February 7th, tetanus set in; death followed February 13th. No lesion was discovered except at the point of vaccination; on the latter there was a deep ulcer, which had an inflamed and indurated border."

Dr. George M. Oxford, of Ridgewood, N. J., wrote me: "I have had under treatment, since November 29th, a case of idiopathic tetanus; it came on suddenly, without any vaccination or injury as far as can be learned. The symptoms were very severe

The fact that the child had an aphthous sore mouth, with a purulent discharge from the buccal cavity or throat, together with the open wound on the arm, leaves open a question of just how secondary infection may have occurred. True it is the sore mouth was coincident and coexistent with the first symptoms of the disease. Watson[1] cites cases of tetanus from salivation. Moreover, beside this case stand the hosts of so-called idiopathic cases. Although no attempt is made to believe this case might have been such in view of the presence of an open wound on the arm and eroded mucous membranes of the mouth and throat, yet the possibility of such being a coincidence might not be altogether disregarded.

From the period of time elapsing from the date of vaccination to the developing of the tetanus, it is certain that this does not correspond to the accepted view of the period of incubation.[2]

In conclusion, the possible source of infection of *the ulcer* might have been from (1) vaselin (which might have been infected from previous use); (2) sponge (which might have been dirty); (3) unsterilized dressings; also from the solution of continuity of the mucous membranes of the mouth and throat.

Against the theory that it was due to vaccination is

1. The existence of "sore mouth," which is possible as offering a nidus for infection.

2. The date of onset not corresponding to the generally accepted period of incubation; and absence of bacilli of tetanus in the pus and tissue from the wound.

3. The fact that the disease manifested such a mild course, and that the fatal issue was depending upon an intercurrent complication. Had not this unfortunate circumstance occurred, and had the child possessed ordinary vitality, it is but reasonable to assume that she would have recovered.

A point that is a matter of regret to the writer is that there was no attempt made to obtain cultures from the purulent discharge from the mouth.

at first, with marked trismus. Now there is more remission and better sleep, but renewal of lighter attacks from reflex irritation, such as noises, etc. I write you this to show that other causes than vaccination may account for your case. My patient is twelve years old."

[Dr. Oxford evidently had seen one of the New York papers with the account of my case, and voluntarily wrote me the foregoing letter. I am not personally acquainted with him. The Doctor writes me under date of January 22, 1894, that his patient is still under treatment, and that his condition is almost unchanged.]

[1] Watson's Prac. of Physic, Lect. xxxiii.

[2] "Within two weeks" (Osler, page 162). "Most frequently makes its appearance at end of first week" (Amer. Text-book of Surgery, page 67). Although Senn Principles of Surgery, page 392) says: "The period of incubation appears to be extremely variable."

LEUKOPATHIA UNGUIUM.

By F. J. STOUT, M.D.,
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INSTRUCTOR IN DERMATOLOGY IN THE PHILADELPHIA POLYCLINIC.

THIS term (derived from λευκός, white, and πάθος, disease) has been given to that condition in which white spots appear upon the nails. A very striking example of this peculiarity was exhibited in the case of A. C., a mulatto, who presented himself in July, 1893, at Dr. Van Harlingen's clinic at the Philadelphia Polyclinic for treatment. The patient is a waiter by occupation, and twenty-one years of age; he has scrofulous glands on the left side of his neck, and is suffering with gastritis; his mother died of tuberculosis; his father is still living. He had always enjoyed good health until last April, when he had an attack of influenza. He is an individual of medium size, and fairly intelligent; at present he is somewhat nervous and weak. The nails of his fingers, and some of those of the toes, present quite a peculiar appearance, being marked with wavy white lines and white spots of a milky color. It will be necessary to describe the appearance of the nails on the individual fingers and toes separately, as they differ somewhat. The nails of the index, middle, and ring fingers of the right hand (see illustration) are marked with a wavy, transverse, white line or lines, more or less perfect, extending from one margin of the nail to the other; between the lines on the index and middle fingers there exist interspaces, which

are normal in color and each about one-sixteenth of an inch in width; the nails of the thumb and little finger are marked each with three separate white spots. On the left hand a similar condition is also observed to exist; each of the nails of the middle and ring finger of this hand exhibits a transverse white band, more or less irregular in contour, extending from one margin of the nail to the other; the narrow strip of intervening normal color between the bands, referred to as existing on the index and middle fingers of the right hand, is, however, lacking on these finger-nails. The band on the middle finger occupies about one-half of the length of the nail; the nail of the thumb is marked with a distinct large white spot on its margin; the nail of the little finger presents a white spot on its surface near the center, and is white along its margin. The nail on the index finger has three transverse bands, which do not extend entirely across the nail-surface, and between these there exists an interspace of about one-eighth inch, which is normal in color. The rest of the nail-substance of all of the fingers appears normal in every respect, and presents a healthy and glossy appearance.

Some of the nails on the toes are similarly marked. On the nails of the right foot white bands are visible, which extend partially across the nail-surface, and also exist at the margin of the nails of the great toe, the second, third, fourth, and fifth toes. On the left foot the margins of the nail of the great and second toes are marked respectively with a similar white line. With this exception, the nails of the toes of both feet do not show any abnormality whatever, and are perfectly healthy in other respects. The hair of the individual does not show any discoloration, but is quite black in color.

According to the patient's statement, these lines and white spots have been present ever since he can remember, and have never disappeared at any time, and no other member of his family on either side has been similarly affected; it would appear from the history of the case that the condition is probably congenital.

The appearances presented by the finger-nails in this man are similar to those existing in a case described by Morison, of Baltimore,[1] occurring in a young lady, twenty years of age, which made their appearance without ascertainable cause, and disappeared after a few months; the nails of the toes, however, were not affected, differing, therefore, in these respects from the case under consideration. Dr. Morris Longstreth, of Philadelphia, in a paper entitled "On Changes in the Nails in Fever, and Especially in Relapsing Fever," describes the appearance of white bands on his own finger-nails after an attack of relapsing fever, which occurred at the time of each relapse of the fever. Crocker (*Diseases of the Skin*) quotes a case recorded by Bielschowsky[2] of a man with peripheral neuritis, in which white spots appeared at the lower part of the finger-nails, rapidly grew, and in three weeks coalesced into a band extending across each nail, a millimeter wide. The toes were not affected. Cases are also on record by Giovannini and Unna[3] (quoted by Crocker) in which the nails on the hands of male individuals were completely white. In Giovannini's case the affection followed an attack of typhoid fever in an individual twelve years old; the hair retained its original color. In Unna's case the condition was probably congenital, and the hair presented a partial appearance of the condition known as ringed hair. Dr. Langdon Down[1] records the presence on the fingers and toes of a gentleman, of two distinct sets of white lines extending transversely over the nails, which made their appearance after he had experienced two attacks of poor health from severe overwork; in this case marked prostration, intermittent action of the heart, and ulceration of one cornea existed; the lines on the nails corresponded with the time of the occurrence of the two attacks. Dr. Herman Lawrence describes[2] a case of leukopathia unguium, characterized by the presence of white bands, in an apparently healthy middle-aged man, which he regards as congenital. The nails on the fingers of this patient's child, a boy five years old, presented a similar appearance, though not so distinctly marked. Dr. Lawrence expressed the opinion that the nails of the child would, in the course of time, show the identical banded condition existing in the father's case.

Careful microscopic examination of nail-substance marked as in the case here described, shows the white bands to consist of air-spaces in the nail substance, similar to those found in gray hairs; we are, however, unacquainted with their mode of origin. White spots, which occur occasionally on entirely healthy nails, point to passing changes in the site of formation of the nails (Hyrtl). Among convalescents from malignant fevers the nails have been noticed to become white. Whiteness of the nails of a chalky hue has been observed in paralytic patients. Sometimes the appearance is evidently partially dependent on trophic changes, as in the cases of Longstreth and Down. According to Hutchinson, white spots may be due to picking back of the nail-fold, and frequently coëxist with similar white spots on the teeth. Geber is of the opinion that they are produced by mechanical means that interfere with the complete cornification of the nail-cells. To these white spots on the nails the ancients gave the name of flores unguium, and in Fallopius' time they were called mendacia ("lies"), and are still vulgarly known as "flowers," or "lies," and as "gift-spots." I am indebted to Dr. E. L. Billstein for the accompanying illustration.

2422 N. BROAD STREET.

[1] "Leucopathia Unguium," THE MEDICAL NEWS, 1887, vol. li, p. 430.

[2] British Medical Journal, Supplement, January 17, 1891.

[3] Giovannini, "Canities Unguium;" Unna, "Leuconychia and Leucotrichia," Internat. Atlas, plate xix.

A Royal Physician.—A number of months ago we took occasion to call attention to the noble work of Duke Karl Theodor of Bavaria. It transpires that another member of the same house, Prince Louis Ferdinand, has likewise engaged in the practice of medicine. The Prince is the cousin of Duke Karl Theodor, nephew of the Prince Regent of Bavaria, husband of the Infanta Maria de la Paz of Spain, and is twenty-three years old. He has recently published a monograph detailing the results of a study of the etiology and pathology of pleurisy, based upon clinical, bacteriologic, and therapeutic observations in twenty-three cases.

[1] Transactions of the Pathological Society, 1870, vol. xxi, p. 409.

[2] The Australian Medical Journal, October 15, 1893.

HOSPITAL NOTE.

A CASE OF RUPTURE OF THE LUNG, UNASSOCIATED WITH FRACTURE OF THE RIBS, WITH EARLY SUBSEQUENT RECOVERY.

Emergency Hospital, Washington, D. C.

SERVICE OF JAS. KERR, M.D., M.CH.,
ATTENDING SURGEON.

Reported by W. L. PYLE, A.M., M.D., Resident Physician.

THE mechanism of this rare and fatal form of injury has been very aptly described by M. Gosselin. It is due to a sudden pressure exerted on the thoracic wall at the moment of full inspiration, there being a spasm of the glottis or obstruction of the larynx; in consequence of which the lung bursts. An extravasation of air occurs, resulting in the development of emphysema, pneumothorax, etc. Subsequently pleurisy, pneumonia, or even pus in the pleural cavity often results. Hemoptysis is a possible, but not a marked symptom. The mechanism is identical with that of the bursting of an inflated paper bag when struck by the hand.

M. Gosselin reports two cases terminating in recovery. Dr. John Ashhurst, Jr., reports having seen three cases, all of which terminated fatally before the fifth day; he has collected the histories of thirty-nine cases, of which twelve recovered. Dr. Otis has collected reports of twenty-five cases of this form of injury from military practice exclusively. These were generally caused by a blow on the chest, by a piece of shell, or other like missile. Among the twenty-five cases there were eleven recoveries. As Dr. Ashhurst very justly remarks, this injury appears more fatal in civil than in military life.

That so severe a form of injury should show such a rapid and continuous recovery as in the case here cited is without a doubt extraordinary, and would seem to make it worthy of report.

Lewis W., ten years old, white, born in Maryland, and living now in the District of Columbia; was brought in by the Emergency Hospital ambulance on the afternoon of November the 10th, with a history of having been run over by a hose-cart of the District Fire Department. The boy was in a state of extreme shock, having a weak, almost imperceptible pulse; his respirations were shallow and rapid, and his temperature subnormal. There were no signs of external injury about his thoracic cavity, and no fracture of the ribs could be detected, although carefully searched for; there was marked emphysema; the neck and side of the face were enormously swollen with the extravasated air; the tissues of the left arm were greatly infiltrated with air, which enabled us to elicit the familiar crepitus of such infiltration when an attempt at the determination of the radial pulse was made. Consciousness was never lost. There were several injuries to the face and scalp; and there was hemorrhage from the nose and mouth, which was attributed to the fact that the patient had fallen on his face, striking both nose and lip. This was confirmed subsequently by the absence of any evidences of hemoptysis during the whole period of convalescence. The saliva was not even blood-streaked; therefore it can be said with verity that there was no hemoptysis.

The first indication in this, and in all similar chest-injuries, is to limit the amount of thoracic expansion. To effect this, the chest was securely strapped with overlapping bands of adhesive plaster, extending nearly around its whole circumference, and a muslin binder was applied. Hypodermatic injections of strychnin and whiskey were resorted to, and hot-water bottles applied, the patient being wrapped in blankets. It was soon found that the respirations were easier, and the pain less marked when the patient was propped up in bed by several pillows, than in the dorsal position. To further control respiration, morphin sulfate in doses of one-sixteenth grain was given at sufficient intervals to keep the rate below 20.

Shortly after admission the patient reacted to the stimulating treatment, his pulse became stronger, and all evidences of threatened collapse disappeared. He rested well the first night and complained of no pain, then or subsequently. The improvement was continuous. The temperature remained normal until the evening of the fifth day, when it rose to 102.2°, and again on the evening of the sixth to 102.3°. This rise was apparently without significance, as the patient at no time seemed disturbed by it. On the eighth day the temperature again reached the norm and has since remained there.

The advisability of thoracic puncture and superficial scarification of the infiltrated tissue to relieve the emphysema was considered; but realizing that such emphysema was not in itself dangerous and that the patient's condition constantly improved under treatment, these procedures were not employed. The wisdom of this decision was demonstrated by the continued absorption of the air and diminution of the emphysema until the ninth day, when it was entirely absent from the tissues. A slight pneumothorax, however, remained. On the ninth day the chest was again carefully examined for evidences of a fracture, but the result of this second examination was again negative; leaving no doubt but that the case was one of rupture without fracture. There developed a slight, dry cough on the fifth day, which, however, soon subsided without any further treatment. The diet was exclusively of milk for a week, when light diet was substituted. The bowels were kept open daily by salines and enemata.

The boy is apparently well now, suffers no inconvenience, and has left the hospital, safe from danger and apparently free from any pulmonary embarrassment. He uses well-developed diaphragmatic breathing which is fully sufficient.

MEDICAL PROGRESS.

A New Method of Examining the Kidney, especially for Stone—At a recent meeting of the Philadelphia County Medical Society, DR. CHARLES P. NOBLE reported the case of a woman, thirty-seven years old, in which the kidney, its pelvis, and perhaps an inch of the ureter, were examined through an exploratory incision in the loin. During a period of six years there had been three attacks of hematuria, accompanied with "renal colic," good-sized stones being passed on two occasions, and the last coming from the left kidney. There had been, besides, milder attacks of paroxysmal pain referred to the right inguinal region, the pain being perhaps most acute just above the greater trochanter of the right femur.

These attacks had become of daily occurrence, and

were brought on when the woman was on her feet. She was usually, though not always, comfortable when in bed, but the pains came on shortly after attempts at walking. The sexual organs were normal, with the exception of a trifling tear in the perineum. The urine was examined many times, and had a very uniform composition. Its specific gravity varied between 1013 and 1020, and the reaction was acid; it contained pus, vesical and ureteral epithelium, but none from the pelvis of the kidney. The urine from each kidney was examined separately, being obtained by means of the ureteral catheter, and was found much the same, the pathologic elements being somewhat more numerous on the right side. The urine from the left kidney always flowed through the ureteral catheter freely and regularly; that from the right kidney did not. Upon two occasions the ureteral catheter remained in position upon the right side upward of twenty minutes, and not more than one or two drops of urine flowed out. Upon another occasion, after waiting thirty minutes with the same result, suddenly 120 minims poured out.

The conclusion was reached that there was a stone in the pelvis of the right kidney. Several attempts were made to pass a ureteral sound along the ureter toward the kidney, but it was not possible to make the sound reach above the brim of the pelvis. It was therefore proposed that an incision be made in the loin for the purpose of examining the kidney and the upper portion of the ureter from above.

Accordingly the usual incision in the loin was made down to and through the peri-renal fat, exposing the lower end of the kidney. With the index finger the kidney was then separated from its connective-tissue attachments and gradually drawn down into and out through the wound, so that it was entirely outside. It was now a very simple matter to explore the kidney by thumb-and-finger pressure, and to make certain that it was in a normal condition. It was equally easy to examine the pelvis of the kidney and to determine that this contained no stone. Perhaps one inch of the ureter also was within reach.

As nothing abnormal could be felt, the kidney was replaced within the abdomen and the incision was sutured in the usual way—buried silkworm-gut sutures being placed in the muscular layer, and superficial silkworm-gut sutures in the skin. No unfavorable reaction followed this operation, and so far as the operation itself was concerned the patient made an uninterrupted recovery. Unfortunately the operation produced no effect whatever on the symptoms.

The opinion is expressed that it should be a simple and safe matter in the hands of a skilful surgeon, who has had some experience in kidney-work, to remove through an incision in the loin all non-suppurating kidneys having approximately the normal size, for the purpose of a careful examination. The procedure is certainly not one of much gravity, and when done under the conditions laid down should have no mortality. Tentatively the adoption of this method of exploring the kidney is recommended whenever the symptoms point to the presence of stone in the kidney or its pelvis, and when these symptoms are of sufficient gravity to invalid the patient.

Upon theoretic grounds this procedure would not be applicable in cases of abscess of the kidney. Under these conditions the kidney would supposedly be fixed and not easily separated from its connective-tissue bed. Moreover, it would be enlarged, and in addition to this there would be the risk of rupturing the pus-sac, perhaps into the peritoneal cavity.

Akromegaly.—At a recent meeting of the Manchester Medical Society, Dreschfeld (*British Medical Journal*, No. 1716, p. 1107) presented a man, thirty years old, who five years before began to display symptoms of akromegaly. The bones of the face and skull were enlarged, especially the lower jaw; the hands and feet showed the characteristic thickening and enlargement, and the bones of the forearm and the clavicles likewise to some extent. There was atrophy of both optic discs, with complete blindness of one eye and diminished vision of the other, without hemianopsia. The thyroid gland could not be felt, but on either side was a well-defined swelling, dipping down into the thorax, and being apparently connected with a mass there which gave rise to dulness on percussion over the upper portion of the sternum. The voice was hoarse and the epiglottis was thickened, but there was no paralysis of the vocal bands. The subjective symptoms consisted of occasional pains in the head. There was also marked sexual weakness. The patient came under observation on account of the excessive dyspnea, which soon yielded to arsenic, with distinct diminution in the size of the tumor-masses in the neck, so that the man was able to resume his avocation. In a discussion of the pathology it was pointed out that neither the persistence of the thymus nor the enlargement of the pituitary body, which must be considered only as one of the symptoms of the disease, can be looked upon as the cause of the disease, which appears to be rather neurotrophic in nature.

Membranous Enteritis in a Young Child.—Thomson (*Archives of Pediatrics*, vol. xii, No. 1, p. 36) has reported the case of a child, two years and four months old, that came under observation on account of being out of sorts and passing pieces of membrane in the stools. The child was pale, but otherwise appeared to be perfectly healthy. Some three months later a second attack of similar character occurred. Both were attended with restlessness at night, crying out, grinding of the teeth, and throwing off of the bedclothes. There was a good deal of tenesmus. The administration of laxatives was followed by the appearance of blood in the stools. The membrane presented the characters of that met in croup. Some of the thicker pieces were distinctly composed of two layers. At times the membrane was passed as an entire tube enclosing the formed feces. Under the microscope it presented a glassy-looking matrix, in which were imbedded at pretty regular intervals numerous epithelial cells in process of fatty degeneration, besides colorless blood-corpuscles and innumerable microörganisms of various forms and sizes. On chemic analysis the membrane was found to be composed mainly of fibrin. In both attacks a mixture containing nux vomica, sodium bicarbonate, and rhubarb was given, and also a few doses of gray powder and rhubarb. This treatment seemed to exert a favorable influence, being followed in a few days by diminu-

tion in the thickness and amount of the membrane, and by a distinct improvement in all of the symptoms.

Intermittent Hydronephrosis Cured by Simple Puncture.—At a recent meeting of the Paris Société de Chirurgie, Hue (*Revue de Chirurgie*, 1893, No. 12, p. 1051) reported a case in which a large tumor had been present in the left hypochondrium for several years, but disappearing from time to time, either spontaneously or as a result of gentle pressure, its subsidence being attended with an urgent desire to urinate, followed by the evacuation of a large quantity of urine. For some time, however, the tumor had become permanent. A diagnosis of intermittent hydronephrosis was made, and transperitoneal puncture brought away clear fluid containing a good deal of urea. The tumor disappeared after this slight operation. It did not reappear, and the patient thereafter remained in perfect health. The opinion was expressed that the puncture relieved a cicatricial band consecutive to tabes mesenterica in infancy and compressing the corresponding ureter.

Sudden Blindness in the Course of Diabetes in Young Persons.—At a recent meeting of the Berlin Society for Internal Medicine, Litten (*Deutsche medicinische Wochenschrift*, 1893, No. 47, p. 1225) reported the cases of two children suffering from diabetes, in which blindness appeared suddenly. The one case was in a girl, seventeen years old, in whom vision had been impaired, and blindness developed in the course of a few hours. Upon inspection the crystalline lens of one eye was found to be quite opaque, and light-perception was lost in this eye. The lens of the other eye presented considerable striation, and vision was cloudy and obscure. The cataractous lens was successfully extracted, with subsequent improvement in vision. The second case also occurred in a girl, seventeen years old, who suddenly became blind in both eyes, with loss of light-perception In this case operation was not acquiesced in.

THERAPEUTIC NOTES.

The Pharmacologic Action of Amylene Hydrate.—As the outcome of a physiologic study, Harnack and Meyer (*Zeitschrift für klinische Medicin*, Band xxiv, Hefte 3, 4, p. 374) arrive at the conclusion that amylene hydrate, like alcohol, paralyzes successively all parts of the central nervous system, after preceding stimulation of individual parts. In herbivora quiet sleep is produced; in dogs and cats the symptoms of excitation and of profound intoxication in general predominate. In small, warm-blooded animals moderate doses are followed by a decline of 4° or 5° C. of temperature, larger doses by a decline of from 10° to 12° C. Even in dogs a decline of 6° may take place. The most pronounced reduction follows the use of a combination of amylene hydrate and certain tetanizing poisons—*e. g.*, santonin. The profound reduction of temperature increases the danger of death, which, on the other hand, is diminished by artificial heat. Respiration is at first increased in frequency and depth, but subsequently becomes progressively weaker to the point of paralysis of the respiratory center. In man the pulse-curve may present certain typical changes (diminution in the systolic elevation and disappearance of the dicrotism) after a dose of a dram. The blood-pressure sinks in warm-blooded animals slowly and progressively until death ensues. Amylene hydrate exerts a peculiar action upon striated muscular fiber; the energy of the frog's heart is for a time enormously increased; there then occurs a sudden fall, followed by irregularity and finally paralysis of the cardiac muscular fiber. The energy of the frog's muscle is at first notably increased, but subsequently there occurs paralysis. Amylene hydrate possesses the power of lessening and retarding the tetanizing action of certain poisons—*e. g.*, santonin, picrotoxin, strychnin. It would be worth while to study clinically the antithermic action of a combination of amylene hydrate and santonin. The results would appear to be promising, as amylene hydrate, when introduced into the stomach, diminishes the elimination of urea, lessening the metabolism of nitrogenous bodies in the organism. The subcutaneous injection of amylene hydrate is objectionable, being followed by increased elimination of urea, probably as a result of the energetic local action of the drug, which leads to abscess-formation and necrosis.

The External Application of Guaiacol to Reduce Febrile Temperature.— As the result of observations in twenty cases of various febrile conditions, including pulmonary tuberculosis, croupous pneumonia, typhoid fever, acute rheumatism, and puerperal infection, Stolzenberg (*Berliner klinische Wochenschrift*, 1894, No. 5, p. 109) arrives at the conclusion that guaiacol, applied to the skin, acts promptly and energetically in reducing temperature. The initial dose for adults should not exceed 30 minims. If this is well borne and a satisfactory reduction of temperature is not brought about, the dose may be cautiously increased, although it will rarely be necessary to exceed a dose of a dram. Moderate doses (not exceeding a dram) exert no unfavorable influence upon heart, kidneys, or other important organs. Larger doses may, in debilitated persons, give rise to manifestations of collapse. The decline in temperature is usually attended with free perspiration, which, together with the chill that occurs when the temperature subsequently rises, exerts so depressing an effect if frequently repeated as to preclude the recommendation of guaiacol for protracted use in the reduction of temperature. It was not observed that any influence was exerted upon the general course of the disease in which the agent was employed.

For Acute Coryza.—

℞.—Acidi carbolici }
Liq. ammoniæ fort. } . . āā f℥ijss.
Alcoholis . . . . f℥v.
Aquæ destil. . . . . ad f℥j.—M.

S.—Several drops to be placed upon a sponge or bibulous paper and inhaled frequently.

Hayem, *Med. Press and Circular*, No. 2856.

For Influenza.—

℞.—Succi digitalis . . . . ♏x.
Tinct. aconiti (B. P.) . . . ♏ijss.
Liq. ammoniæ citratis . . . f℥ijss.
Aquæ . . . . . ad f℥ss.—M.

S.—Repeat every hour for four hours, then every two, three, or four hours.

Burton, *Med. Press and Circular*, No. 2856.

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SATURDAY, FEBRUARY 24, 1894.

THE BACTERIOLOGIC EXAMINATION OF DRINKING-WATER.

WHEN KOCH discovered his method of isolating germs by plate-cultures it was believed that the vexed question of deciding whether or not a certain water could be used by man without harm had been settled. Bacteriologists in all parts of the civilized world arranged their gelatin-tubes, cold chambers, and plates, and the good work began. The typhoid-bacillus should no longer hide itself in our daily drink. The chemist, with his estimations of free and albuminoid ammonia, chlorids, nitrates, nitrites, etc., had been unable to capture this great enemy of man, but the bacteriologist promised that he would succeed. What could be more easy? By means of the plate-cultures, each germ in the water could be isolated and grown in pure culture. After the latter had been obtained, the typhoid-germ, it was supposed, wears a uniform so distinct and characteristic that it can be recognized at sight. But it was soon found that the wily bacillus does not display any characteristic marks, if he has any. The bacteriologist was forced to admit that the task which he had undertaken was not so easy. Even the cholera-germ sometimes appears without his crook, and the typhoid germ forms a plainly visible mould on potatoes. Moreover, ordinary harmless saprophytic germs may have a properly fashioned curve and may form an invisible growth on potatoes. Having ascertained these facts, the bacteriologist changed his tactics. He no longer tried to isolate the specific microbe. He would decide as to the purity of a drinking-water by the number of germs present. But again there was trouble. One man thought that the limit for a safe drinking-water should be fifty germs per cubic centimeter, while another placed the limit at ten times this number. A learned professor at Jena closes a treatise of nearly three hundred pages on the bacteriologic examination of drinking-water with the following conclusions:

"The use of water which contains a specific pathogenic germ should be absolutely forbidden."

Then he goes on to say:

"The detection of specific pathogenic germs in water is surrounded by so many difficulties that its accomplishment is not likely to occur in the future."

With this statement he gives up the search for specific germs and takes up the number per cubic centimeter. Having decided that the proper solution of the question lies in counting the number of germs, he capitalizes the following:

"A large number of germs in the water of a well whose surroundings are questionable and of whose proper construction we are not certain suggests the possibility of infection. On the other hand, however, when the surroundings are favorable, when the well is properly constructed and covered, one may use the water notwithstanding the presence of a large number of germs."

If one of the most eminent authorities comes to the conclusions mentioned, it can hardly be a matter of surprise that some should regard the method ordinarily practised in the bacteriological examination of drinking-water as not altogether satisfactory.

In THE MEDICAL NEWS for June 14, 1890, p. 641, and in the *American Journal of the Medical Sciences* for August, 1892, p. 167, DR. VICTOR C. VAUGHN details the method used in the Hygienic Laboratory of Michigan University. This method consists briefly of the following steps:

First. The water is collected in sterilized bottles.

Second. Beef-tea tubes are inoculated with water, from one drop to one cubic centimeter being added to each tube.

Third. The inoculated tubes are kept at 38° C. for twenty-four hours.

Fourth. Many germs found in drinking-water will not grow at so high a temperature. Waters containing only such germs are pronounced safe. Certainly it must be admitted that a germ which will not grow at the temperature of the human body cannot possibly induce disease.

Fifth. Of the germs which do grow at 38° or higher, some are toxicogenic to animals, while others are not. Whether the germs in a given sample are toxicogenic or not is determined by injecting the prepared cultures subcutaneously or intra-abdominally in rats, guinea-pigs, rabbits, or mice.

Sixth. Waters containing only the non-toxicogenic germs growing at 38° or higher are reported as safe.

Seventh. Waters containing toxicogenic germs are condemned. In testing the virulence, a germ is not pronounced toxicogenic unless it be found growing and multiplying in the animal inoculated with it.

This method has been employed in the Hygienic Laboratory of the University of Michigan since October, 1888.

Recently BLACHSTEIN, working in the Pasteur Institute under the direction of METSCHNIKOFF (*Annales de l'Institut Pasteur*, No. 10, October, 1893) reports a method which may be condensed as follows:

First. Beef-tea is inoculated with the water.

Second. These tubes are allowed to stand for some days at ordinary temperature.

Third. From ½ to 1 c.c. of these mixed cultures is injected subcutaneously or intra-abdominally into guinea-pigs or rabbits.

Fourth. If the animal is killed by this injection the water is condemned.

BLACHSTEIN concludes his paper with the following paragraph:

"While I do not wish to draw any definite conclusions, I must emphasize the general fact that in all my researches waters which are suitable from the hygienic standpoint produce mixed cultures, when prepared as indicated, which are wholly inoffensive to animals."

It will be seen that there is nothing new in this method of BLACHSTEIN. It is crude compared with the Michigan method. There is no separation of those germs growing below 38° from those growing at this temperature or higher. While the former certainly cannot affect man, their cultures may contain chemic poisons which may kill the animals. There is no attempt in the method of BLACHSTEIN to ascertain whether or not any of the germs live after their introduction into the animal. This method is published as a discovery and is recommended as the best means of determining the purity of drinking-water, while, as we have stated, the other method, which contains whatever of good there is in BLACHSTEIN'S and excludes much that is doubtful, has been in use for more than five years.

KOCH, in his recent contribution upon the diagnosis of cholera (*Zeitschrift für Hygiene*, B. xiv), also adopts the inoculation-method in determining whether or not the cholera-bacillus is present in a given sample of water. He states that spirilla resembling cholera-germs may be found in many waters, and he recommends only two tests in deciding whether or not a given sample of water contains this bacillus: first, the indol-reaction, and second, the effect upon animals. We certainly do not see how much reliance can be placed upon the indol-test, because, as is well known, many germs, including some spirals, produce cultures which respond promptly to the indol test. This is true of the vibrio of METSCHNIKOFF, the FINKLER-PRIOR spirillum, DENEKE'S vibrio, and a comma-bacillus recently obtained from water by BONHOFF, likewise one by NEISSER. There are also present normally in the small intestines of man germs which produce indol. Every tyro in physiology knows that the production of indol through the activity of bacteria is constantly going on in the small intestines and is regarded as a part of intestinal digestion.

We have called attention to these methods of hygienic examination of water because the matter is one of great importance, and certainly it is time for us to dismiss the unscientific and useless procedure of determining the number of germs in a water without any reference to the kind of germs.

AN OPPORTUNITY FOR AMERICAN MEDICINE TO AID AMERICAN BIOLOGY.

EVERY physician who has the best interests of his profession at heart will admit that these interests will be advanced by bringing into medicine students of broad scientific education. The very commendable effort of some of our medical schools to advance medical education is a step in this direction.

Unquestionably, the students most desirable for medicine are those who have received a thorough training in the biologic sciences. Therefore, any-

thing which will increase the efficiency of biologic teaching must indirectly benefit medicine. But medicine, unfortunately, is still backward in extending to biology that fellowship so essential to successful results; and medicine does not offer the trained biologist a flattering prospect. It follows, then, that the biologist does not extend his energies into an unprofitable field, and, as a consequence, biology retains and medicine loses a valuable adherent. In fact, it too frequently happens that biology, instead of medicine, offers to the scientific physician an alluring field.

What may be done to invite into medicine this most desirable class of students? Elevate the entrance requirements and improve the course of study. Make provisions for well-trained and scientific physicians which will encourage them to remain in the profession, and to give to medicine the fruits of their labor.

Finally, coöperate directly with the biologists of America in any effort which will lead to a mutual advantage.

For several years a company of American biologists, under the direction of Professor C. O. Whitman, of the University of Chicago, have endeavored to put upon a sound working basis a coöperative marine biologic laboratory, at Wood's Holl, Massachusetts. From time to time Professor Whitman has set forth the aims of this institution, and has pleaded for the support and growth of the enterprise.[1] We earnestly recommend anyone who is interested in this subject to consult these articles for full details of the project.

Suffice it to here say that the Marine Biological Laboratory at Wood's Holl is a seaside research and instruction laboratory which is supported by the coöperation of certain American biologic schools and societies, and in which students are received for biologic instruction, and advanced workers are assisted in the prosecution of original researches. The pecuniary support of the Laboratory is entirely dependent upon private endowment; upon the subscriptions of interested institutions; and on the fees of the students; Government aid, for unfortunate political reasons, being neither proffered nor desired.

"The character and work of the Laboratory are shown by the following facts: The Laboratory is governed by a board of trustees on which the leading colleges and universities are represented. Its officers have been drawn from as many as *fifteen* of our higher educational institutions, and its membership has extended to *one hundred and thirty-one* colleges, universities, seminaries, academies, schools, and laboratories. During the last session forty-one investigators worked at the Laboratory, while the whole number, including students, was one hundred and eleven, representing seventy-two institutions and no less than seventeen States. Nearly *one hundred scientific papers and books* have resulted from work at the Laboratory, and have been published or are now in press."[1] Many of these papers are of profound interest to medicine.

Along with its other functions the Laboratory aims to become a center for research in *comparative physiology*, and, later, in *comparative pathology*. Assuredly, this means much for medicine.

As with every other altruistic enterprise in this egoistic age, the Laboratory is much hampered for funds wherewith to carry out its aspirations. It needs, moreover, the coöperation of more institutions—in this extensive coöperation everything is possible.

Is it not time for American Medicine to go on record as recognizing its sister science, American Biology, in support of this Laboratory of grand possibilities? Cannot every first-class medical college and medical society in this country afford to accept the invitation of Professor Whitman and his colleagues, and subscribe for a table at the Laboratory, or send some worthy student to profit by its advantages?

Let us at least make the acquaintance of a project which has every claim upon us.

[1] The Popular Science Monthly, February, 1893; The Atlantic Monthly, June, 1893; Biological Lectures, delivered at the Marine Biological Laboratory of Wood's Holl, 1890 and 1894, Ginn & Co.

EDITORIAL COMMENTS.

An International Sanitary Conference, for the consideration of the measures to be taken to regulate the pilgrim traffic in the Red Sea and Persian Gulf, with the view of preventing the importation of cholera to Mecca and its dissemination thence along the track of the returning Hajjis, which was originally to have been held in Paris on January 24th, was postponed to February 6th. It was expected that the Conference would occupy itself with tracking the cholera to its seats of origin—that is, Asia and India, dealing especially with the Meccan pilgrimage. There is reason to hope that the Sultan and the Shah of Persia will assist in arresting the development of cholera at its Asiatic ports of entry and posts of reinforcement.

[1] Extract from circular for "Local Committees."

As Mr. Ernest Hart has pointed out, Mecca is a main center from which European cholera spreads, and Hagar's well, where the Mussulman pilgrims wash and drink, is nothing better than sewer-water; in one day (June 26, 1893) there were 500 deaths at Mecca from drinking this water.

It seems agreed that the extinction of epidemic cholera in Europe may be secured without great difficulty. There are two ways of attaining this result: to insure everywhere perfectly pure drinking-water, and meantime put an end to the cause of insalubrity of the Meccan pilgrims. "Outside of this all measures are illusory; fumigations, railway and frontier quarantines, powderings and antiseptic fluids, are only vain ceremonies, simple sacrifices to popular ignorance, the idolatrous homage which dirt pays to cleanliness. The prime focus of cholera is India; its gates of invasion are the Indian fairs and the Meccan pilgrimage. Mecca is the reinforcing station of cholera between the Gulf of Bengal and Europe; it is there especially that the chief danger lies."

The measures required appear to be the installation of medical posts and posts of inspection at two points, the most important to be watched—Thor and Camaran. Every ship and every caravan of pilgrims should be accompanied by a medical staff furnished with all that is necessary for the purification and disinfection of the sick. Other matters for consideration are the reorganization of the sanitary service of India, the regulation of the great fairs of that country, the organization of a system of inspection of the pilgrims before leaving the Indian ports, and the curatorship of the sacred wells in which the Mussulmans bathe and drink at the same time.

The American delegates to the Conference are Dr. E. O. Shakespeare, Dr. Stephen Smith, and Dr. Preston H. Bailhache.

We await with much interest the outcome of the deliberations of this conference.

A Bill for an International Maritime Conference for the Better Care and Protection of Animals in Transit is now in the hands of the Committee on Inter-State and Foreign Commerce of the House of Representatives at Washington, and is one that in the interests of civilization and humanity should be passed. The bill provides:

"That the President of the United States be, and he hereby is, authorized and requested to invite the government of each maritime nation to send delegates to a quarantine conference that shall assemble at such time and place as he may designate, and to appoint seven delegates, one of whom shall be an official of the Treasury Department, one an official of the Department of Agriculture, one a representative of the steam marine, one a representative of the sailing marine, one citizen familiar with the cruelties to animals practised at sea, one citizen familiar with the importation of blooded horses, and one citizen engaged in the transportation of cattle, to represent the United States at said quarantine conference, and to fill vacancies in their number.

"It shall be the object of said quarantine conference to make, revise, and amend the rules, regulations, and practice concerning the transportation of animals at sea and their lives and slaughter in quarantine; for the proper construction of vessels for animals in transit; for the punishment of navigation companies or vessel-owners, their officers and employés, for cruelty to animals at sea; to make navigation companies or vessel-owners liable in damages for destruction of or injury to animals in transit; and to formulate and submit for ratification to the governments of all maritime nations proper international regulations, laws, penalties, and punishments for cruelty to animals at sea."

Here is a work for the anti-vivisection societies, and one wherein they will certainly be acting both in the interests of true kindness and of true science. A thousand times more suffering takes place in the transport of one herd of cattle from the plains of the West to Liverpool than has ever been caused by all the vivisection experiments of all time. But aside from the humane aspect of the question there is the sanitary side. The flesh of animals hideously tortured as these are is necessarily poorer and more dangerous food than that of healthy and properly-cared-for animals. It is well known that mental and physical pain and passion profoundly alter the tissues and secretions of animals, and may even render them toxic. The filth and crowding also intensifies and scatters every communicable disease. Medicine and noble sentiment here unite for a common work that needs to be done.

Liability for Injuries when Death follows Surgical Operations.—When death results from a personal injury as its direct and proximate cause the party responsible for the latter is liable for such death. In the case of Rettig *vs.* Fifth Avenue Transportation Company, recently decided by the Superior Court of New York City, General Term, which was an action brought to recover damages for alleged negligent acts causing injuries resulting in the death of the injured person, the defence was raised that death was rather caused by a surgical operation than by the injuries complained of. One of the attending physicians at the hospital to which the injured man was taken testified that he died from the result of his injuries, that his condition necessitated a surgical operation, which was skilfully performed, and that he died of the shock that followed. This evidence is declared admissible, and the court holds that the surgical operation and the consequences flowing from it in no manner relieved the transportion company from liability for the death as a result of the injuries inflicted by its negligence. Indeed, the court shows that it has been held that when a person who, through the negligence of another, has received an injury which, without a surgical operation, would cause his death, employs a competent and skilful surgeon, by whose mistake the operation is not successful, and the patient die, the wrongdoer is not shielded from liability by the surgeon's error; and this although the operation is the immediate cause of the death.

The Right Policy and the Right Principle.—We warmly commend to the earnest consideration of the members of the medical profession generally and of the American Medical Association in particular, the frank and outspoken language of a resolution recently adopted unanimously by the Ottawa City Medical Society to the effect that "under no circumstances shall the members of this Society consult with any homeopathic or other irregular practitioner." These are brave and noble words and will receive the indorsement of right-minded men

everywhere who recognize that there can be but one kind of physician and not halves and quarters and eighths and more minute fractions. The true physician, as we have more than once taken occasion to say, will use any remedy whose nature is capable of determination, whatever its source, independently of creed or dogma, if he but knows that it will save life, prevent disease, or relieve suffering. There may be homeopaths, and eclectics, and Thompsonians, and faith-curers and what not, but a physician should truly be a *physician*—nothing more, nothing less.

The First Chinese Medical College.—The first medical college worthy the name established by the Chinese Government was recently opened with formal ceremony at Tientsin. The project owes its origin to the intelligence and energy of the Viceroy of China and his wife, who constructed the necessary buildings and placed the direction in the hands of a distinguished graduate of the University of Dublin, selected by the late Sir Andrew Clark. The establishment of the college is attributed to the efforts of the Viceroy's medical attendant, Dr. Irwin, and to the influence of a Canadian woman, Dr. King. Some twenty well-educated English-speaking Chinamen have enrolled themselves as students, and the work of instruction has already been begun.

Liability of the Husband for Medical Attendance upon the Wife.—President Judge Hanna, in delivering the opinion of the Orphans' Court of Philadelphia, in the case of Waesch's Estate, says: The liability of the husband for medical attendance upon his wife, even although she has a separate estate, is too well settled to admit of argument. He is primarily liable, and her estate is liable only in case he be insolvent. If any balance then remains for distribution, the expenses he should have paid will be deducted from his distributive share.

The Cleveland Medical Society, although but a year old, seems established on a secure basis. Its membership already numbers two hundred and is growing rapidly. Permanent quarters for the Society and a library are projects well under way. The Society has done good work in uniting the medical profession of Cleveland into a harmonious and influential body.

SELECTIONS.

THE PRESS, THE QUACKS, AND THE PUBLIC.

AN address on this subject was delivered on Saturday evening at Toynbee Hall, E. C., by Mr. Ernest Hart. After referring in a general way to the growing power of the press, its accumulating responsibilities, and the admirable manner in which on the whole they were fulfilled, Mr. Hart turned to certain phases of journalistic responsibility which more especially came under his notice as a medical editor. He cited a considerable number of instances in which untold harm was effected at the present moment by the facility with which a considerable number of journals of high position and large circulation placed their columns at the disposal of a large class of persons who habitually practised open falsehood and palpable deceit, and worked untold harm among the more credulous sections of their readers. The vast circulation of the daily and weekly press, growing in importance, made this subject one of daily increasing moment, and he openly and directly charged a large proportion of the newspaper press of this country with sacrificing their duty, the honor of their calling, and the public interest to the inducements of palpable quacks and venders of either dangerous or insidious wares, offered at preposterous prices under palpably false pretences. The health of the people was being undermined, their morals were being sapped, and they were being robbed wholesale by unscrupulous venders of secret medicines; worse than this, a great proportion of religious papers and provincial papers sold their columns to persons who openly traded upon the weaknesses, the sins, and the fears of the married and unmarried of both sexes. The quack and patent-medicine impostor of olden times had a limited sphere of mischief; he had his cart or his stall in the market-place, and for the most part he was more ridiculous than harmful, but now limited companies were formed, syndicates were established, and great financial operations were undertaken to carry out an extensive system of preying upon the public with the aid of the vast publicity sold by the newspapers. Mr. Ernest Hart then read correspondence which he had had with the managers of some of the leading newspapers, in which some of them had frankly recognized their responsibilities in the matter, and described the precautions by which they protected their advertising columns from becoming the medium of such wholesale deceptions of the public. He referred, however, to the details of the Harness system of advertising, and to the advertisements and editorial puffs afforded quite recently to dangerous adventurers, free-lances in irregular medicine, and spoke of the career of the Anna Ruppert skin-lotions and to some of the results of the public medical lectures, freely reported in the daily papers. He asked that something of the same censorship should be exercised over the advertisements and editorials in the papers in dealing with medical matters as was admittedly exercised in ordinary advertisements relating to law, to commerce, and financial affairs. Advertisements putting forth evidently unfounded and impossible statements as to banking, or lotteries, or giving racing tips or gambling incitements, were not admitted into respectable papers. Why should the monstrous, dangerous, and palpably false statements and delusive promises put forward by the exploiters of secret medicines be alone accorded the unrestricted publicity of newspapers, great and small? Mr. Hart proceeded to say that the worst offenders were papers often full of religious pretension and social philanthropy. The evening papers, even in London, were great offenders, and the Sunday papers, from some of which he read extracts. Some Sunday and evening papers of the metropolis were setting the abominable example of publishing the monstrous statements of the quack advertiser as editorial articles in ordinary type. This was sinking to a lower depth of degradation than was customary, even in the lower types of British journalism, and was quite unworthy of papers having otherwise many claims to consideration.—*British Medical Journal, No. 1726, p. 208.*

PRESIDENT ELIOT ON INTERCOLLEGIATE SPORTS.

PRESIDENT ELIOT'S annual report was made public on the 20th inst. He says:

"In the highly competitive sports which give rise to exciting intercollegiate contests—namely, boat-racing, baseball, and football—there have been developed in recent years some evils of a serious nature. No sport which requires of the players more than two hours a day during the term time is fit for college use. No student can keep up his studies and also play his full part in any one of these three sports as at present conducted. There is something extremely inappropriate in the extravagant expenditure on athletic sports at such institutions as Harvard and Yale. In the game of football the players have been forced by public opinion to overtrain and overwork, until there is great risk of injury and even death. To become brutal and brutalizing is the natural tendency of all sports which involve violent personal collision between the players, as in football."

In the matter of remedies the President suggests the following changes:

1. There should be no freshman intercollegiate matches or races.

2. No games—intercollegiate or other—should be played on any other but college fields belonging to one of the competing colleges, or in the college town.

3. No professional student should take part in any intercollegiate contests.

4. No student should be a member of a university team or crew in more than one sport within the same year.

5. No football should be played until the rules are so amended as to diminish the number and the violence of the collisions between the players, and provide for the enforcement of the rules.

6. Intercollegiate contests in any one sport should not take place oftener than every other year.

REVIEWS.

MINOR SURGERY AND BANDAGING, INCLUDING THE TREATMENT OF FRACTURES AND DISLOCATIONS, TRACHEOTOMY, INTUBATION OF THE LARYNX, LIGATION OF ARTERIES, AND AMPUTATIONS. By HENRY R. WHARTON, M.D., Demonstrator of Surgery and Lecturer on Surgical Diseases of Children in the University of Pennsylvania; Surgeon to the Presbyterian Hospital, the Methodist Episcopal Hospital, and the Children's Hospital; Consulting Surgeon to the Presbyterian Orphanage. Second edition, thoroughly revised and enlarged, with 416 illustrations. Pp. 529. Philadelphia: Lea Brothers & Co., 1893.

THIS book, as its title expresses, is one which deals with more than is usually or legitimately included in a work upon minor surgery. It is probably this fact which has found for it so many friends as to necessitate the publication of another edition.

Part I is devoted to the subject of bandaging, the many methods of the application of the bandage being well illustrated by cuts, most of them from photographs. The various procedures of minor surgery—amongst which, however, are included tracheotomy and intubation of the larynx—are described in Part II. Here will be found also a very good account of the theory and practice of asepsis and antisepsis in the treatment of wounds, which the author has carefully revised for this edition, a description being given of all of the antiseptic agents now employed, as well as plain directions for the preparation of materials and dressings used in aseptic surgery. Parts III, IV, V, and VI, in which are described respectively fractures, dislocations, ligation of arteries, and amputations, are written in as plain and practical a manner as the rest of the book, and are amply illustrated with well-chosen cuts.

We congratulate Dr. Wharton upon the success which has attended his book, and we feel sure that the additions to this second edition will bring to it even greater success.

THE MODERN CLIMATIC TREATMENT OF INVALIDS WITH PULMONARY CONSUMPTION IN SOUTHERN CALIFORNIA. By P. C. REMONDINO, M.D. Detroit, Mich.: George S. Davis, 1893.

THOSE who think of sending patients to California will do well to read Dr. Remondino's excellent little book. The advice given is good and the meteorologic and epidemiologic statistics cited will aid in determining what cases to send to that region. There are, perhaps, too many and too long quotations for a booklet of 126 pages, and we would have wished the advertisements of nostrum and of real-estate omitted from the fly leaves. For this, however, publisher and not author is responsible.

CORRESPONDENCE.

THE TERMS "INFECTIOUS" AND "CONTAGIOUS."

To the Editor of THE MEDICAL NEWS:

SIR: Your editorial in the issue of THE MEDICAL NEWS for January 27th on "The Infectiousness of Tuberculosis" revives a feeling which has often occurred to me of late, and which perhaps has also occurred to others, that the time has come for an authoritative expression on the part of those best qualified to judge—that is, the pathologists—as to the exact sense in which the terms *infection* and *contagion* should be used. When myself a teacher of pathology some years ago, following Wagner, and, I believe, most German pathologists of that day, I taught that an infectious disease is any disease due to a specific cause, whether such cause originates in another person having the same disease or from some external source, as the atmosphere or soil. Then, after the bacterial origin of these diseases came to be admitted, the definition of an infectious disease became a "disease caused by the implantation and proliferation of a pathogenic microörganism," not including, however, the parasitic skin-diseases. Thus defined, infectious diseases are divisible into two groups, *contagious* and *miasmatic*. Contagious diseases are those derived from others having the same disease, while

miasmatic are those of which the cause originates externally. Of contagious diseases typical instances are, of course, smallpox and scarlet fever, while a typical instance of miasmatic disease is malarial fever. Thus infectious diseases include contagious diseases, and while every contagious disease is an infectious disease every infectious disease is not a contagious disease.

Modern studies have greatly altered the list of diseases in each of these categories, that of the contagious diseases having been enlarged by the addition of many formerly included among miasmatic, while the latter have grown correspondingly less numerous. Thus yellow fever and even typhoid fever, always regarded as infectious but formerly classed as miasmatic, are now included among the contagious, so that malarial fever remains essentially the sole miasmatic disease. To the former category tuberculosis has now to be added, being both infectious and contagious, through the tubercle-bacillus, which is the contagium or specific cause, the sputum being the contagium-bearer. The idea of contact implied in the etymology of the word contagious is the misleading idea. The absurdity, however, of applying the term contagious to the diseases only communicable by *actual* contact is apparent, because it is well known that smallpox can be communicated from one person to another without actual contact; and if the term were restricted to such cases as actually originate by contact, smallpox would sometimes be a contagious disease and sometimes not.

The term miasmatic-contagious was at one time applied to diseases of which the true origin was doubtful or which might be both contagious and miasmatic.

This use of the terms may be all wrong in the light of modern knowledge, but in such matters as these the pathologists should give the stamp to our thought, and this would seem to be a suitable time for them to agree upon such use of these terms as our modern knowledge demands, and give those who desire to use them accurately the benefit of their *united* opinions. The idea of what constitutes an infectious disease seems pretty definite. But what shall we do with "contagious"? Shall it be made to mean the same as infectious? Certainly the parasitic skin-diseases are contagious, and contagious in the strict meaning of the word, but I believe they are not regarded as infectious.

JAMES TYSON, M.D.

1506 SPRUCE STREET.

THE OPERATION OF VAGINAL HYSTERECTOMY BY ENUCLEATION DUE TO LANGENBECK.

To the Editor of THE MEDICAL NEWS,

SIR: I find on referring to the literature of the subject, that the operation of vaginal hysterectomy by enucleation (see MEDICAL NEWS, February 10, 1894) is *not* original with Dr. Pratt, but is a revival of the old operation of Langenbeck (1813).

Wrisberg and Monteggia *first recommended* total extirpation in carcinoma of the uterus. The first operations of this kind (Marschall, 1783; Langenbeck, 1813) were performed on prolapsed uteri; strictly speaking, were not total extirpations.

Langenbeck's successful operation exerted great influence, and his method of subperitoneal enucleation of the uterus long dominated the opinions of his followers.

Abstract of Langenbeck's method. "I now came to that portion of the uterus, which, seen from the front, was inserted into the peritoneum as into a cloth. I also separated very accurately the substance of the uterus from the peritoneum, without cutting it, because otherwise the intestines might have protruded, and constantly drew out the uterus. I continued this separation to the upper rounded border of the fundus uteri, and then cut the uterus out of the peritoneum in such a way that a small piece, which seemed to be perfectly healthy, remained connected with the peritoneum. This was consequently a true enucleation of the uterus out of the peritoneum, so that the latter, in connection with the vagina, formed an empty bag." The ovaries, which Langenbeck thought he had removed, were found at the autopsy.

In 1822 Sauter performed the first extirpation of a carcinomatous uterus *in situ* through the vagina. He first separated the fornix from the uterus and then attempted to enucleate the uterus from its peritoneum. The operation was unsuccessful and the bladder was injured. He then opened into the anterior peritoneal fossa and divided the lateral connections of the uterus with the tubes and broad ligaments; then grasped the fundus, turned it over, and separated its last connections with the posterior fornix. The intestines were replaced, the vagina tamponned; not more than one and a half pounds of blood were lost. Complete recovery followed, but the woman died four months later, of pulmonary edema.

Récamier's much more perfect method (1829) is distinguished from that of Sauter by the fact that, after opening the anterior peritoneal fossa, the upper two-thirds of the broad ligament alone were removed, but the lower third and uterine artery were grasped between the index finger and thumb and ligated. Hemorrhage was slight and removal of the ligatures followed on the tenth day. In 1830 Delpech recommended a combination of the hypogastric and vaginal methods.

Malgaigne's (J. F.) proceeding.[1] "Circularly incise the vagina as far down as the disease allows, gently and cautiously down to its external cellular tunic; dissect it up, reflecting it like the skin in an amputation; push back the bladder or intestines, if you meet them, beyond the reach of the instruments; detach the womb if possible by enucleation and without opening the peritoneum; or open that membrane cautiously; and lastly, divide the lateral attachments of the womb by which its vessels pass to it. The lateral attachments may be all tied together before they are cut; or, better, the arteries may be tied immediately after they are divided; and lastly, the operation is terminated, uniting by suture the wound in the vagina, so as to shield the peritoneum from contact with the air. Langenbeck once had recourse to an analogous proceeding; having found the bottom of the wound healthy, he carefully separated from it the diseased parts, and thus avoided opening the peritoneum; the woman recovered." Very respectfully,

ROBERT REYBURN, M.D.

WASHINGTON, D. C.

[1] Op. Surg., transl. by F. Brittan. Philadelphia: Blanchard & Lea, 1851. Page 551.

TO PREVENT THE SPREAD OF TUBERCULOSIS.

To the Editor of THE MEDICAL NEWS,

DEAR SIR: The exceedingly interesting discussion on "The Contagiousness of Tuberculosis," reported in THE NEWS of February 10th, is probably the most important deliverance on the subject which has recently been given to medical science.

Granting that the dried sputum is the infecting material, it seems to me that the disinfection of public vehicles is of even greater importance than the disinfection of houses. The abominable habit of spitting in street-cars is probably one of the most prevalent sources of contagion. It is true that in this city notices are displayed in most of the street-cars, forbidding the habit, but as the officials, from president to conductor, appear equally uninformed and indifferent, no attempt is ever made to enforce the rule.

If the Board of Health would use its influence with the higher officials of the car-companies, and the profession would endeavor to interest individual stockholders in the matter, it might be possible to have instructions issued to conductors to call the attention of the filthy offenders to their misconduct; and if these instructions were carried out effectually, the spitters would probably prefer to abandon their habit rather than stand the constant staring to which they would be subjected by their fellow-passengers, when called to account.

Is not the tuberculous spitter as real a source of danger, under the circumstances, as a smallpox patient? The latter would clear a car in an instant, if his disease were recognized, while the consumptive spitter continues undisturbed to disgust the decent among his fellow-passengers, and scatter poison absolutely broadcast as he goes. Is there no remedy for this?

Yours respectfully,

GILBERT H. SHEARER.

2128 ARCH ST., PHILADELPHIA.

ORCHECTOMY FOR HYPERTROPHY OF THE PROSTATE.

(A Second Note.)

To the Editor of THE MEDICAL NEWS,

SIR: A short time ago (see THE NEWS, December 30, 1893, p. 748) I stated that I had removed both testicles from an old man suffering from enlarged prostate, in accordance with the suggestion of Prof. J. William White. Eight weeks have elapsed since the operation, and the patient is practically cured.

In another case, in which sections of the vasa deferentia were removed, I can as yet see no change.

Two weeks ago I removed the testicles of another old man, who stated that he had not urinated except through a catheter for two years. Since the operation he has passed about an ounce of urine naturally several times every day.

Further results will be published hereafter.

I trust other surgeons will publish brief reports of their experience with this promising procedure.

Respectfully,

FRANCIS L. HAYNES.

LOS ANGELES, CAL.

NEWS ITEMS.

Suicide.—A committee of the New York Medico-Legal Society, to which was submitted the question of the repeal of the existing law making punishable unsuccessful attempts at suicide, recently presented the following report, which was approved and ordered to be submitted to the Legislature of the State and the Constitutional Convention:

1. It [the law] is wholly indefensible from the standpoint of this great principle, that all penal laws should have for their object the deterring rather than the punishment of crime.

2. It in effect repeals the former laws making suicide a crime, and makes its unsuccessful attempt punishable only; so that its effect is to stimulate the would-be suicide to higher efforts toward self-destruction to avert the punishment it visits only upon failure.

3. The act, therefore, instead of serving as a deterrent to the commission of crime, which should be the aim of penal legislation, is one which, in its whole scope and effect, incites to and probably actually increases the volume of this crime.

4. Civilization, in the recent centuries, has regarded and treated suicide as a crime, and has attempted to so frame its penalties as to act as a deterrent upon the minds of those who sought or have contemplated it.

The majority of mankind would be influenced by any post-mortem punishment that would bring disgrace or reproach upon the names, family, or friends of the suicide.

The existing statute ignores the universal recent judgment of the race, in relieving the successful suicide from all such restraints, with their conceded deterrent effects.

5. A large proportion of suicides are confessedly those laboring under insane delusions. Unsuccessful attempts by such, under the existing statute, are pitiful examples of the incongruity and unwisdom of the law in its practical operation.

6. It is claimed, and with great propriety, that the present statute is practically inoperative.

We respectfully submit that this enactment should no longer remain among our criminal statutes.—*Medico-Legal Journal*, vol. xi, No. 3, p. 331.

Dr. August Hirsch, Professor of Special Pathology and Therapeutics and of the History of Medicine in the University of Berlin, died January 28th, at the age of seventy-seven years. His most important publication was a handbook of Geographical and Historical Pathology.

Dr. T. Cranstoun Charles. Lecturer on Practical Physiology at St. Thomas' Hospital Medical School, died on January 24th, in the forty-fifth year of life. He was the author of a handbook of Physiological Chemistry.

BOOKS AND PAMPHLETS RECEIVED.

On Some Considerations upon a Kind of Acute Gangrene in Relation to Atheroma and Embolism. Its Treatment and Operative Results. By Dr. R. Lavista. Mexico: Printing Office of F. P. Hoeck, 1893.

Inebriety. By R. M. Phelps, M.D. Reprinted from the Northwestern Lancet, 1893.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

THE RELATION BETWEEN THE GROSS ANATOMY OF THE APPENDIX AND APPENDICITIS.[1]

BY JOSEPH D. BRYANT, M.D.,
OF NEW YORK.

THE anatomic peculiarities of the appendix that affect directly the symptomatology of appendicitis relate especially to the location, direction, and extent of the appendix. The local symptoms are chiefly modified by these characteristics of the organ. The emphatic symptoms belonging to this category may be briefly stated as pain, tenderness, tension, and tumor.

The situation and character of the pain, together with its reflex manifestations, comprise its important elements as modified by the individuality of the diseased appendix causing it. If the pain be dull and throbbing, and be influenced but little, if any, by respiratory movements, the involvement of connective, rather than serous tissue, is indicated. Later in the case, however, the supervention of serious painful phenomena may be slowly or quickly announced.

Appendicitis with primary fibrous-tissue involvement is necessarily rare, as then the appendix is extra-peritoneal, or is completely environed by inflammatory adhesions, the result of repeated attacks. In but three instances of one hundred and forty-four autopsies made for other than appendicular trouble was the appendix found outside of the peritoneal cavity. In one of these it was above and behind the cecum and colon; in another, behind and near the inner border of the colon, extending even to the liver; and in the third it was behind the colon near the outer border. It is in accordance with the well-known law that the character of pain is modified by the kind of tissue involved, to assume that had either of these appendices been diseased, the primary pain would have been of the connective-tissue type, continuing so until peritoneal involvement had ensued, either by extension of the inflammatory process, or of abscess-rupture. It was my good fortune but a few years ago to meet with a well-pronounced case of this kind in Bellevue Hospital. In this instance, a dull throbbing pain had been present for some time beneath the ascending colon, with tenderness and induration. Suddenly the acute agonizing pain indicative of peritoneal involvement occurred, quickly followed by peritonitis and rapid death. At the time of the consultation I ventured to predict: (1) the presence of a diseased appendix behind the cecum and colon; (2) extensive connective-tissue inflammation and abscess; (3) rupture of the abscess into the peritoneal cavity. The results of the autopsy justified each prediction.

In many cases of recurrent appendicitis the familiar pain of acute attacks is not present at the outset, and may not appear at all; and, too, respiratory movements cause but little, if any, additional infliction. I saw such a case but a few days ago during recovery from a fourth attack, with intervals of one year each. It is, of course, superfluous to say that primary intra-peritoneal appendicitis causes acute pain, for this is the typical manifestation of the disease. It is proper to add, however, that the mobility and length of the appendix have much to do with the severity and extent of the pain, and also with the rapidity of the diffusion of the poisonous products of the disease. All are aware that the appendices of some are comparatively "free" in the peritoneal cavity, their movements between the contiguous intestines being limited only by their mesenteries, or their attachment to the cecum. The free extremities of such as these are often observed extending upward from between the intestinal loops, and at this time can be aptly compared to the erect position of the deadly cobra when prepared to strike.

Let us now glance for a moment at the records attesting the freedom of movement of intra-peritoneal appendices. In sixty-six examinations, twenty-six (40 per cent.) were "free," in that one-half of the entire length was surrounded by peritoneum. The remaining forty had mesenteries varying from three-fourths to more than an inch in length. Surely the length and the freedom of movement of a diseased intra-peritoneal appendix exercises an important influence on the intensity and area of the pain, and the rapidity of the diffusion of the disease-producing elements. Dr. Reginald Fitz, in his oft-quoted and classic article, published in the *American Journal of the Medical Sciences*, October, 1886, says: "Sudden severe abdominal pain is the most constant first decided symptom of perforating inflammation of the appendix." As a proof of the fact, he shows

[1] Abstract of a paper read at the meeting of the N. Y. State Medical Association, February 7, 1894.

that this manifestation occurred in 216 of 257 cases, or 84 per cent. of the number. If we now turn our attention to the percentage of "free" appendices, and those with mesenteries of more than an inch in length, we also find their sum to be 84 per cent. of the entire number. Certainly this similarity of percentages is, at the least, a strange coincidence.

While it is doubtless true that the situation of the pain is regulated to some extent by the location and direction of a diseased appendix, still, neither time nor utility will permit me to indulge in hair-splitting distinctions in this regard, based on the fact of the extension of the appendix outward, downward, inward, etc., as this feature alone possesses no practical importance, except when the appendix extends beyond the usual limit. It may not be amiss to add, in this connection, that the appendix runs inward in about 25 per cent.; that it is curled behind the cecum in about 20 per cent., and that it extends into the pelvis in 14 per cent. of all cases. The average length (post-mortem) of the appendix in the male is $3\frac{1}{2}$, and in the female $3\frac{1}{10}$ inches, as deduced from 144 examinations. The importance of the frequency (14 per cent.) of intra-pelvic extension should not be considered lightly. Nor can the differences in the length of the organ, as between the sexes, be deemed insignificant, when it is noted that the half-inch difference between them causes the appendix of the male to enter the pelvis twice as often as that of the female. The clinical importance of intra-pelvic extension of the appendix cannot be gainsaid. In a diseased appendix there located the pain may be nearer the hypogastrium, and, too, it may involve the pelvic peritoneum, and modify the action of the pelvic viscera during functional activity. And especially are these facts true if the extremity of the appendix be the portion involved by gangrene or perforation.

Thus far only direct pain has been considered, of both the acute and dull types. Reflex pains, while less important than the direct, are, nevertheless, of great diagnostic significance. Frequently during the course of an attack, and especially at the outset, reflected pain may be present in almost any part of the abdomen. And, too, it is observed not infrequently in the testicle, perineum, rectum, thigh, lumbar region, etc. In fact, referred or reflex pains may occur in the distribution of any spinal nerve directly involved by the disease. Fitz has shown that in 213 cases of appendicitis pain was present in the right iliac fossa in 48 per cent.; in the abdomen in 36; in the hypogastrium in 5; in the umbilical region in 4; in the epigastrium in 2; and 1 per cent. each in the stomach, hepatic region, left iliac fossa, and right hip and groin. I myself treated a case on June 23, 1886, in which the pain was referred to the umbilical region only. That this was a genuine case cannot be gainsaid, as the appendix was found to be perforated and was removed. The anatomic reason for the occurrence of these reflex pains resides in the well-known influence exercised by the abdominal sympathetic ganglion on the contents of the belly. A misplaced appendix, or a wandering cecum, will account for an unusual pain-site in a few instances. Without amplification, it is sufficient to say now that pain in the right testicle, with or without its retraction, indicates the direct involvement of the genito-crural nerve. The same may be said also of the ilio-inguinal, and the anterior crural, when pain is referred to their respective distributions, in connection with recognized or suspected appendicitis.

Tenderness, the second of the inherent manifestations of appendicitis, may be either local or general, superficial or deep, keen or dull, depending on the extent, location, and character of the inflammation and the variety of the tissue involved by it. If the extra-peritoneal connective tissue be first involved, as when the appendix is located behind the colon, or behind a cecum not surrounded by peritoneum, or outside the peritoneum elsewhere, and, perhaps, between the layers of the broad mesentery of the appendix, the tenderness at the outset is local, deep-seated, and dull. That such cases as these are rare is obvious, on account of the great infrequency of appendices so placed. Quickly, however, the dull tenderness is supplemented and obscured by the acute variety, due to the rapid extension of inflammation to the contiguous peritoneum. The rapidity of the supervention of the acute pain is in direct proportion to the gravity of the lesion and the amount of connective tissue involved by it. Dull tenderness of much duration is indicative, therefore, of a post-colon position of the appendix, and especially is this true in the absence of a meso-colon, which, according to Treves, happened in 52 per cent. of the subjects examined by him.

Acute tenderness is, of course, strong proof of the involvement of the peritoneum, and when it is circumscribed and marks the outset of the attack, its location may be accepted as indicating the site of the initial lesion. If this statement be true, then, indeed, no definite point of tenderness can be established that may be regarded as diagnostic of this disease. The varying directions of the appendix already cited; the differences in its length, and in the situation in it of the point of greatest disease; together with the doubt as to the location of the cecum from which it arises, all conspire to make the establishment of such a point impossible, and a reliance on it impracticable and misleading. Of general tenderness I will say but little, as it cannot be regarded as indicative of a circumscribed

process, and is, therefore, not to be considered as of much practical bearing on the arrangement of the appendix. It is proper, I think, to say that in those cases of appendicitis observed by me, in which the diseased appendix was "free," the area of tenderness was far greater than in those not so freely movable.

The term tension refers mainly to tension of the abdominal walls—a tension that may be limited to the side of the attack, or be more or less general, according to the extent of the inflammation associated with it. The presence of this tension-phenomenon is of beneficent significance and should incite the profoundest respect of the most skeptical minds. The motor nerve-fibers that animate the abdominal muscles are from the lower intercostals, and are intimately connected with the sympathetic supplying the abdominal viscera, through the lower thoracic ganglia from which the splanchnic nerves are derived. As a result of this arrangement, in acute peritonitis the muscles of the abdomen become quickly and firmly contracted, and thus shield the underlying viscera from external force and keep them as quiet as it is possible to do by physical means alone. Tension of the right rectus abdominis muscle in appendicitis is an early and important symptom and indicates the presence of limited peritonitis, and fulfils the conservative purposes already stated. And for these reasons the left rectus goes on guard too, when its subjacent viscera are similarly involved. Muscular tension in this disease is not limited entirely to the abdominal walls, as the psoas and iliacus muscles also contract from nervous involvement or direct implication, causing flexion of the thigh. The bladder and rectum often become fretful, especially if the diseased appendix extends into the pelvis or is attached to the peritoneum at its brim. The cremaster muscle exercises its prerogative on the testicle, if the genito-crural nerve is implicated.

Tumor is a symptom of dual importance on account of its diagnostic and therapeutic significance. The former attribute alone concerns the subject of this paper. That the situation and extent of the diseased appendix has much to do with the location and the determination of the presence of tumor cannot be denied. Generally speaking, the location of the tumor indicates the situation of the lesion, and it is especially significant if the tumor be small, firm, deep-seated, and fixed in its position. If, on the other hand, it be large, not firm, superficial, and movable, its bearing on the site of the initial disease is of a general character only. When present, according to Fitz, tumor is detected by palpation from the first to the eighth day of the attack, inclusive. In 24 cases it appeared—in 1 on the first day; in 3 on the second; in 4 on the third; in 2 on the fourth; in 4 on the fifth; in 5 on the sixth; in 4 on the seventh; and in 1 on the eighth day. The third, fifth, and sixth days are noticed to be the most prolific ones. Tumor may be early present and yet not be detected till later in the disease, owing to its obscure position, as when associated with a diseased appendix that is located behind the cecum (22 per cent.); when placed behind the colon (2 per cent.); when extended into the pelvis of the intra-pelvic portion to the diseased part (14 per cent.); with a tympanitic cecum, and with general tympanites irrespective of its location. In the intra-pelvic cases tumor may often be detected in the pelvis and not elsewhere, by rectal or vaginal examination. Still, in these cases, tumor may escape the vigilance of the closest scrutiny.

Owing to time-limit I have dwelt only on the leading cardinal symptoms, leaving consideration of the rarer and more curious manifestations for another occasion. In closing, permit me to submit the following conclusions for your consideration:

1. That the location, direction, and extent of the appendix have an important bearing on the clinical history of appendicitis.

2. That the well-recognized variations of the appendix in length, direction, and location, and the varying site of the cecum, and of the seat of the disease of the appendix, make the establishment of a definitely-seated diagnostic point of tenderness unwise and misleading.

THE PATHOLOGY OF LOCOMOTOR ATAXY.[1]

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Locomotor ataxy has found its place in all of our modern text-books on nervous diseases amongst the lesions of the spinal cord. As our knowledge of the pathologic changes in tabes became more exact we found that the spinal cord was not by any means the only part of the nervous system affected. Sclerotic lesions of the posterior spinal roots of the peripheral, spinal, and cerebral nerves, occasionally, also, alterations in the nuclei of cerebral nerves, were discovered. The substance of the brain, it would appear from these reports, is not, as a rule, diseased.

An attempt to explain the genesis of the symptoms in almost any case of locomotor ataxy will soon convince us that comparatively few of them can be attributed to the spinal cord. We know that such disturbances of the functions of the bladder, rectum, and genital organs, as are com-

[1] Read before the Chicago Medical Society, February 5, 1894.

monly found in tabes, can be caused by spinal lesions; they do, however, also occur in diseases of cerebral origin.

Westphal's symptom—the disappearance of the knee-jerk—seems to be undoubtedly a spinal one. The discoverer of this most important sign was fortunate enough to be able to localize its origin very exactly in the spinal cord, his researches proving that degeneration of a region called by him the "Wurzeleintrittszone," by French authors "bandelettes externes," was associated with loss of the knee-jerk.

As to the localization of the most important symptom of this disease, the one from which it was named, we know nothing of a positive nature whatsoever. Attempts have been made to explain it by assuming it to be due to sensory disturbances in the joints. All of them have, in my opinion, been decided failures. If there were a connection between these two symptoms, then every case with marked ataxy ought also to present marked sensory disturbances, and any case with slight sensory disturbances only slight ataxy. This is not the case. I have myself seen a case in Heidelberg with very marked incoördination of the movements of the lower extremities. The man has repeatedly been subjected to a very exact examination within the last few years, which has never revealed any sensory disturbances which could have caused the ataxy. Other cases are on record presenting complete anesthesia and not a trace of incoördination.

Jendrassik has called attention to the fact that, leaving locomotor ataxy out of consideration, there is no case on record which proves that ataxy can be caused by a spinal lesion. Some few observations, it is true, are quoted as proofs of this statement, but in some of them the brain was never examined; in others, when this was done, cerebral changes were found as well as spinal lesions.

Never, to my knowledge, has anybody succeeded in producing incoördination of movement by experimentally injuring the spinal cord. There are quite a number of cases on record in which degeneration of peripheral nerves has been found in ataxic subjects. Here, too, it seems that the brain was never examined.

Pitres has reported a case of pseudo-tabes with ataxy, in which spinal cord, spinal roots, and spinal nerves were found to be intact. Does not this observation clearly demonstrate that we must search for the lesion higher up in the nervous system, in the medulla oblongata, pons, or brain.

Glotz's researches have induced him to assume the existence of a center for coördination above the spinal cord. He describes the alterations of motility in his dogs after removal of portions of the brain by comparing the movements to the "Hahnentritt," the step of a cock, a name which is frequently used in Germany in designating the walk of the ataxic. Wernicke and Kahler have seen cerebral lesions followed by ataxic movements exactly like those in tabes, and within the last year or so a similar asssociation was described in a tumor of the frontal lobe—if I am not mistaken, by Bruns. I have seen two cases of this nature, one some years ago, without, however, being able to give the details today. A second was kindly referred to me for examination by my friend, Dr. Carl Beck, only a short time ago. The patient, J. B., is a waiter, fifty years old. His parents are alive, his mother having had a stroke of apoplexy when seventy years old; the father is said to be healthy. B. has partaken of stimulants somewhat freely. In 1870 or 1871 he had a chancre, followed by exanthemata. He is married, but has no children. He has been ill for the last two years. At first the toes of the right foot became cold and numb. He was then delirious for about two weeks, and it is impossible to ascertain whether or not he had delirium tremens. At the end of this time he attempted to get up at night, but fell, as both of his legs were paralyzed. The arms were not weakened; his sphincters acted perfectly well; he was not unconscious; there was no anesthesia. After five or six days he was so far improved that he could get around with the assistance of two canes. The left limb soon regained its normal power; the right one, however, caused him a good deal of inconvenience, as he had intense pain in it whenever he tried to stand or walk, but it too did not remain paretic, nor did it become rigid. Seven or eight months after this there was a syphilitic ulcer on the right shoulder. Pain began to make its appearance in the right arm and the right upper portion of the trunk, being intensified by every movement. Then the speech became impaired; there were paresthesiæ in the right arm; and movements became clumsy. In the right side of the head he always has a painful sensation of heat. One and a half years ago he had double vision for about four months, which disappeared spontaneously. He never had headaches, and did not vomit. The memory is not impaired, nor have the functions of the higher senses suffered.

The right pupil was larger than the left, and the reaction to light was lessened on both sides. Marked tremor of the tongue and facial muscles existed. The speech is thick. There is paresis of the right arm, but no atrophy. The deep reflexes are less marked on the right than on the left side. Pronounced ataxy of the right arm exists. Sensibility is normal. In the legs there was also ataxy on the right side, and the knee-jerk was lessened on both sides. When the patient closes his eyes and places his feet close together, he sways slightly.

The abdominal reflexes are absent. The most scrutinizing examination reveals but one additional symptom, but this one alone enables us to reach a diagnosis. There is a choked disc on the left side. Hence this is a case of tumor of the brain, with marked ataxy of the right extremities.

One more point deserves to be mentioned in this connection. Although few, there are some cases of locomotor ataxy in which the onset of the incoordination is quite acute. I have been fortunate enough to see two cases of this kind. It will hardly do to attribute a symptom that appears quite suddenly to the chronic, very slowly progressing lesions, such as we find in the spinal cord. Of late, attempts have been made to improve the condition of the ataxic by systematically practising movements, and they have been very successful. Can we learn with our spinal cord? Can practice decrease the number of degenerated fibers in the posterior columns?

A part of the sensory disturbances in locomotor ataxy may readily be explained by lesions of the posterior columns; others, however, it appears to me, are due, to a change not in the conducting but in the perceiving organs. In this connection I would mention the symptoms of allocheiria, polyesthesia, and after-pain, all of which are to me intelligible only if I assume that the function of apperception and not that of mere conduction is impaired.

The symptoms just enumerated have very probably their origin in some part of the nervous system other than the spinal cord. There is another series, no less numerous than this, which is surely due to extra-spinal lesions. Amongst these, ocular disturbances are both the most important and the most frequent, very often preceding by years every other sign of illness. I refer to the atrophy of the optic nerve, to ophthalmoplegia interna and externa. Eulenburg has compiled statistics on the frequency of these symptoms, comprising sixty-four cases of locomotor ataxy. In these he found strabismus divergens 19 times, 4 times associated with paralytic ptosis; strabismus convergens, 6 times; mydriasis, 6 times; myosis, 28 times; amblyopia, 31 times.

Topinard has examined 102 cases of tabes and found amblyopia in fifty-one, or exactly 50 per cent. These statistics ought to be considered sufficient proof of the fact that the ocular disturbances are more than chance complications, that they are very important and constant symptoms, as constant almost as any found in tabes. I have mentioned the impaired reaction and increased or decreased size of the pupils amongst the extra-spinal, or rather, cerebral symptoms, as I am convinced that this is the correct localization for them. Although we know exactly where to search for the so-called cilio-spinal center in the spinal cord, nobody has, to my knowledge, ever found any lesion of this portion in a case of locomotor ataxy. Bramwell is certainly fully justified in attributing the loss of pupillary reaction to light and the decrease in size of the pupil to cerebral changes.

There are quite a number of other symptoms of clearly cerebral origin not infrequently found in ataxy, such as atrophy of cerebral, auditory, olfactory, and other nerves; paralysis of accommodation, hemiatrophy of the tongue, paralysis of the sensory or motor portions of the fifth nerve, lightning-pains in the head, attacks of vertigo, transient apoplectiform seizures, transient hemiplegia, convulsions in cases which never develop general paralysis (Kahler), various forms of insanity, besides the exceedingly frequent combination with paralytic dementia, drowsiness, headache, hyperemia cerebri, and increased irritability. Steinthal has noticed, and Erb confirms his observations, that patients suffering from locomotor ataxy are very frequently remarkably gay and satisfied with their fate. Athetosis has been observed by Cruveilhier, Hammond, Leyden, Laquer, and others.

If cerebral changes are as common in locomotor ataxy as the frequency of cerebral symptoms would seem to make probable, why are they so rarely described? Whoever has attempted to find microscopic lesions in a brain without knowing just where to look for them will not hesitate to answer this question. It is an undertaking that requires more patience and more time than most observers wish to give to it. The difficult and tedious task has, however, been undertaken in a few cases within the last few years. And the results are just what we must expect if we consider the symptoms. In every case examined, diffuse changes in the cerebrum have been discovered. Jendrassik was the first to undertake these researches. He examined the brain of two individuals who had suffered from locomotor ataxy, but had not presented any symptoms of general paralysis, and in both cases he found cerebral lesions. Somewhat later I had occasion to control his results in another case in which the inspection at the time of the post-mortem examination did not indicate that the brain was diseased. Unfortunately this case was not a pure one, as the microscope revealed the existence of diffuse syphilitic lesions in the membranes of the brain and spinal cord. This was the first time that meningitis syphilitica had been found associated with the typical tabetic degeneration in the posterior columns. Since then a number of similar cases have been published. Kraus has recently communicated the result of his most diligent and exact researches on the pathology of locomotor ataxy. Unfortunately, like most of his predecessors, he, too, has not taken the trouble

to make a microscopic examination of the brain; but even so, his work is of the greatest importance to us. He has examined the brain macroscopically thirteen times and has found changes in the brain-substance proper, the cerebral nerves, or the membrane with the naked eye, thirteen times. The lesions discovered were:

	TIMES.
Atrophy of the optic nerve	2
Atrophy of the olfactory nerve	1
Atrophy of the brain	4
(Perhaps also present in a fifth case.)	
Pachymeningitis	4
Leptomeningitis	6
Edema of the brain	4
Hydrocephalus internus	2
Multiple encephalomalacia	1

A good deal of work still remains to be done, but this much I think can be said to-day: That the brain is diseased in the majority, probably in all cases, of locomotor ataxy; that quite a number of the most constant symptoms of this disease are very probably, and some of them surely, not of spinal, but of cerebral origin; and that locomotor ataxy is certainly not merely a spinal disease, but one rather of the entire central and peripheral nervous system.

THE CAUSES AND TREATMENT OF MIGRAINE.[1]

BY H. GRADLE, M.D.,
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A REVIEW of the latest standard text-books on nervous diseases reveals, on the whole, a very unsatisfactory state as regards the treatment of sick headache and shows also much uncertainty as to its causes. Marked discrepancies exist amongst different authors on the subject. On this account I wish to place before you some personal observations based on a large experience with this disease, as in my line of practice migraine is a very common annoyance.

In order to limit the subject I shall confine myself strictly to migraine or sick headache, or that form of headache which recurs in periodic attacks, with free intervals of variable length between the spells. This is the only definition which I can accept as characterizing the disease, because the symptoms may vary much in different persons. Even the symptom that has given the disease one of its names, viz., sick headache—that is to say, the nausea often leading to vomiting toward the end of the attack—occurs in less than one-half of the patients and in these not with every attack.

I have but little to add to the symptomatology. Some of the less common symptoms, however, may be worth pointing out. In one of my patients the attack began with dizziness and a subjective feeling of chilliness and numbness so pronounced that the disease was mistaken for malaria by the family physician. Yet this was a migraine of distinct ocular origin and completely relieved by glasses. In many cases an attack begins with flickering and greater or less visual disturbance, sometimes in the form of hemianopsia, sometimes with gradual shrinkage of the visual field. This form has been called by different writers ophthalmic migraine and scotoma scintillans fugax. There exist, however, all gradations between the most pronounced instances of this type and ordinary migraine. After the short spell of dizziness the typical headache comes on. It has almost seemed to me as if this form of "blind headache," as it is popularly called, were better known to the public than to the profession at large. In comparatively few instances the "blind spell" is not followed by any headache at all, its place being taken by other nervous symptoms, such as numbness or a feeling of pressure in the head.

In the etiology of migraine I wish to combat what seem to me certain errors that are repeated in most modern text-books.

Gowers, for instance, considers migraine a manifestation of gout. Its appearance, however, in early life, even in childhood, and its frequent spontaneous cessation after middle life, speak against this view. Even in migraine-patients of advanced age I have not seen gouty manifestations often enough to suggest any connection.

Again, many authors connect migraine with epilepsy. Yet the one is an exceedingly common complaint, the other a relatively rare disease. Moreover, it must not be overlooked that an epileptic may have sick headaches, as well as a person not so afflicted. The most probable reason why this otherwise unsupported view of the relation of these two diseases has been copied in the text-books seems to me to have been a diagnostic error. It is not unlikely that the minor attacks that often precede the history of pronounced epileptic seizures have been mistaken for erratic forms of migraine.

According to my personal experience migraine is not characteristic of a neurotic tendency. While I admit that this headache is often hereditary in families and that it is more liable to occur in persons of a neurotic disposition, I have observed many instances in which neither the patient's antecedents nor the family history indicated any liability to functional disorders or lesions of the nervous system.

The most frequent etiologic factor of migraine within my experience has been astigmatism. One of the reasons for dwelling on this relationship, so well known to all oculists, is the fact that it is slighted or ignored by many authorities on nervous diseases. (Gray, Gowers, Hirt.)

[1] Read before the Chicago Medical Society.

I cannot, however, give statistics of any value on this subject, for most of the patients came to me not on account of their headaches but on account of their eyes. Hence, even if I had complete records, they would consist of selected cases and would therefore be valueless for statistical purposes.

As an approximative estimate, I would judge nearly one-half of all instances of migraine to be dependent upon astigmatism. But the very fact that not all astigmatics suffer from sick headache shows that certain conditions of the nervous system are requisite to the occurrence of migraine.

The proof of the relation of astigmatism to migraine is furnished by the permanent cessation of the attacks when correcting glasses are worn. But the attacks do not always cease at once after the ametropia is corrected. Sometimes a few mild spells will still occur. Again, in other instances the attacks do not cease entirely, but become less frequent and less severe. It must be remembered, however, that the most perfect correction of the astigmatism ceases to be perfect when the patient looks through the glass at an angle with the axis of the glass, and that patients are not always as faithful about wearing their glasses as the physician expects them to be. Yet I could find on my records over a hundred illustrations of permanent relief by glasses, controlled by observation after months and years. Occasionally patients have returned to me after years of freedom, with a return of the old headache, due to incorrect repairs of their broken glasses.

The degree of astigmatism most commonly associated with sick headache is from one to three diopters. High degrees of astigmatism often cause no annoyance except poor sight. Whenever migraine seemed to depend on an error of less than one diopter down to one-half it has been mostly in persons of a neurotic history. I have never been able to trace sick headaches or any other form of complaint to an astigmatism of less than one-half a diopter. I have but rarely prescribed weaker glasses myself, but neither in my own instances nor in numerous observations in which patients had received such weak glasses from others have I seen any decisive benefit following their use. It has seemed to me that astigmatism with oblique meridians is more likely to cause migraine than when the principal meridians are either approximately vertical or horizontal.

Finally, I do not wish to conceal the fact that migraine may occur in conjunction with astigmatism, without apparent dependence upon the latter. For in a few rare instances the satisfactory optic correction had no effect upon the headache.

In practice the question often occurs whether migraine can be caused by an astigmatism which the patient does not feel as eye-strain. I have not made any observations enabling me to decide that question definitely. There are certainly instances in which patients with migraine curable by cylindric glasses do not complain of their eyes spontaneously, but on close questioning they have usually admitted that their eyes did get tired or weak on prolonged use.

Hypermetropia has been but rarely the cause of migraine in my observation. This condition, it is true, is a very common cause of headaches, but they are not of the periodic type. Very commonly hypermetropia, as well as astigmatism, gives rise to headache immediately following the use of the eyes, but this form of pain is not the subject of the present paper.

A much less common source of migraine in my experience has been nasal disease. Inflammatory affections of the nose and accessory sinuses lead very often to headache it is true, but not of the migraine type. Since Hack first reported his accidental cures of migraine by nasal cauterization some ten years ago, I have searched for the etiologic influence of nasal troubles in all cases which were not clearly traceable to eye-strain. I have not been able to confirm Hack's observations, however, that sick headaches are frequently ushered in by nasal irritability, and in such instances permanently stopped by cauterization of the turbinated bodies. But I have seen at least six instances in which unilateral migraine occurred principally or exclusively on the side of a nasal stenosis, and in which permanent improvement not far from a perfect cure followed the operative removal of the stenosis.

Another peripheral affection that has seemed to me to have an etiologic relation to migraine is intestinal catarrh. I cannot say much as to its frequency, on account of the limitation of my practice, but I have obtained not so very rarely a history of dyspeptic annoyances, with loose passages alternating with constipation, in patients whose migraine could be attributed neither to eye-strain nor to nasal disease. The relation of the two disorders to each other—suggested by the histories—was made very probable by the improvement in the headaches following the dietetic and hygienic management of the intestinal disease. As a rule, however, I have seen such patients in consultation and I have not always been able to follow their subsequent course.

In less than one-half of the cases of migraine under my observation no peripheral source of the headaches could be found.

An influence which has often shown itself by aggravation of the headaches is overwork and want of sleep, as for instance in nursing mothers. I have not been able to satisfy myself, however, that malnutrition from other causes plays any rôle in this disease.

It is of importance to study what influences lead to the occurrence of attacks in patients subject to migraine. Many persons claim that any disorder of digestion would bring on their spell. I think this is an error, and that the nausea which often terminates the attack is a symptom of nervous origin and does not indicate any primary gastric disturbance. In those instances which I have been able to study closest, I have never observed gastric anomalies preceding the attack; nor have I seen the attacks brought on by actual stomach-disorders. In some patients insufficient sleep is the most important exciting condition of migraine. In instances of migraine beginning with scotoma, I have observed attacks induced by dazzling illumination, an observation to which Manz has also called attention.

The treatment of sick headache has been most satisfactory to me in those cases in which eye-strain was the cause. With very few exceptions glasses have always given such patients relief. If well selected and properly worn they have practically abolished headaches in most instances.

My own experience, although limited, as well as the more extensive observations of Hack, suggest that whenever migraine cannot be attributed to eye-strain, a nasal influence should be searched for. Whenever a one-sided migraine corresponds to a one-sided nasal stenosis, or whenever a marked irritability of the nasal cavernous tissue exists and makes itself noticeable at the time of the attack, nasal treatment offers at least a reasonable prospect for a permanent cure.

The improvement which I have witnessed after dietetic management of intestinal catarrh should likewise be a hint in the examination and treatment of patients with migraine.

Whenever overwork seems to play a rôle, we may expect improvement by proper hygienic directions. I have repeatedly seen patients temporarily and a few times permanently benefited by travelling, even though the journeys did not involve complete relaxation from business or from studies.

Of drugs I know none that will cure migraine except cannabis indica. According to my experience from one-fourth to one-third of all patients are permanently benefited by its use. This applies equally to cases without a peripheral source of irritation, as well as to those with eye-strain, who for some reason or other would not wear glasses. Seguin, who first popularized the use of Indian hemp in this disorder, advised its continued administration in every case, and claimed more or less complete relief in about one-half of his observations after several months' treatment.

When I began the study of cannabis indica about twelve years ago many preparations in the market were inert. I found, however, a solid extract prepared by Hering absolutely reliable. Squibb's hemp is perhaps equally good, but I have not had the same experience with it. For reasons of convenience I have always used the tincture (360 grains to the pint) prepared with Hering's extract in doses of from 15 to 25 drops. This dose must not be given oftener than once in six or eight hours, or it will lead to a cumulative and often very disagreeable effect upon the mind. My first experience showed that in certain patients cannabis indica aborts each attack of migraine. If the first dose does not give complete relief I give another in six hours in slightly larger quantity. When moderate doses fail entirely, larger ones answer no better purpose. Very severe attacks are sometimes only relieved, but not entirely aborted.

Whenever hemp influences the individual attack, its continued use twice daily will usually protect the patients against the recurrence of the spells, and if persisted in for months, will cure many but not all of the cases. I have scarcely ever insisted on its continued use in those instances in which it did not alleviate the pain at the time, and have no reason to think that it would prove of service to such patients in the long run.

Other drugs recommended in the text-books for the cure of migraine, such as iron, strychnin, arsenic, and phosphid of zinc, I have used but little myself and invariably with negative results. But I have had a fair experience with patients who had followed such treatment on the advice of other physicians, and likewise without appreciable benefit.

If the individual attack does not yield to cannabis indica it can be stopped almost invariably by antipyrin. Acetanilid and phenacetin are not as universally successful as antipyrin. Guarana has in former times more often failed than proved satisfactory in my patients. Bromids do not stop the attacks, although they may relieve the discomfort. Chloral aborts migraine only when it induces sleep in patients whose headache will yield to sleep. Morphin has no effect at all upon the attack. It only dulls the pain while its action lasts.

Quack Medical Advertisements Refused.—Our gratification at finding the following prominent notice on the title-page of the *Farm Journal* leads us to quote it entire:

"No quack medical advertisements in this paper—not one. Yet dearly would they like to get in. This very month we could have had a thousand dollars' worth without the asking. And we call this simply 'fair play' to our readers. Would it be more than 'fair play' on *your* part to send us a club of five or ten subscribers in recognition of our efforts to keep our columns clear of such trash?

"Rogues shall not ply their trade at the expense of our subscribers, who are our friends, through the medium of these columns. Let this be understood by everybody now and henceforth."

TUMORS OF THE SUPERIOR MAXILLA.

By J. H. BRANHAM, M.D.,
OF BALTIMORE, MD.

The object of this paper is to relate the histories of two interesting cases operated on by me during the past summer at the City Hospital, and to discuss briefly some of the more important points suggested by these and similar cases, especially with reference to treatment.

Case I.—Peter K., twenty-nine years of age, a colored male laborer, was admitted to the City Hospital, June 22, 1893. Nine years previously the left half of the inferior maxilla was removed by the late Prof. O. J. Coskery for sarcoma; about three years ago an epulis was removed from his left superior maxilla by Prof. C. F. Bevan. The patient says that the present growth has been coming on for about two years. There is no history of injury. Examination showed considerable bulging forward of the left side of face and projection of the malar bone and part of the superior maxilla upward, so as to close, partially, the left eye. The left hard palate was very much depressed, and projecting backward behind the posterior palatine arch was a large, soft tumor which largely filled the left side of the pharynx. The clinical diagnosis of sarcoma of the superior maxilla was made, and excision was advised and readily consented to by the patient.

The operation was performed June 28, 1893. The face and neck having been shaved and made clean by soap, water, potassium permanganate, and mercuric chlorid, the patient was given chloroform and a preliminary tracheotomy was performed. The pharynx was cleansed and packed with absorbent cotton. The Ferguson incision from the front of the ear underneath the orbit and down the side of the nose where it joins the face, and down the middle of the lip, was then made. The hemorrhage was considerable, but was readily controlled by Péan forceps. The cheek was next separated from the bone. The bony attachments of the left superior maxilla were next rapidly cut through with large bone-pliers, and this bone with the left palate bone was removed. It was now found that the pterygoid processes of the sphenoid were involved in the growth which projected backward, and these were cut through high up at their junction, and removed. It was discovered that the tumor projected downward toward the glenoid cavity, and in removing this part the hemorrhage was excessive. As soon as the operation was completed the hemorrhage was easily controlled by pressure.

The posterior attachments of the tumor were separated by scissors and the curet was applied to the deeper parts of the cavity after the operation. The cavity was now packed with sterilized gauze, and the skin-wound was closed by continuous sutures, after which a sterilized gauze dressing was applied.

The tracheotomy-tube was removed on the second day, but the wound remained open for about a week. The packing was removed from the cavity on the seventh day. The foul odor which is so disagreeable in these cases was overcome to a great extent by a 2 per cent. solution of potassium permanganate.

The temperature was never higher than 102°. The skin-wound healed by first intention, the lower cavity left by the operation rapidly filled by granulation, and the patient made an uninterrupted recovery. He was discharged July 28th entirely well and strong.

Case II.—Hannah McK., a white female, forty years of age, American, widow, was admitted to the City Hospital, August 26, 1893. She had been struck on the side of the head by a shuttle about a year before. About four months ago she first noticed a swelling on the right side of the face, which seven weeks ago broke into the nose and mouth and discharged very offensive matter. This discharge has been repeated every two or three days since. The patient has suffered great pain and has been using anodynes freely. She was very anemic and weak. Projecting from the right maxilla underneath the skin, by the cheek, was a soft, pulsating tumor that almost closed the right eye; over this, the skin was tense and reddish. The mass pressed well down into the mouth and closed the right side of the nose.

Operation was undertaken August 28, 1893. The incision was the same as in the preceding case. The tumor was found to have destroyed almost entirely the superior maxilla. This, with the palate and part of the ethmoid were removed, and the cavity was throughly curetted. The posterior part of the orbit was extensively invaded. The patient took the anesthetic (chloroform) badly, and was given several injections of strychnin and digitalis during the operation. She rallied slowly after the operation and was very weak for several days. The hemorrhage, although not excessive, was severe. The skin-wound healed by first intention. The woman improved rapidly after the first few days, and was able to be about in two weeks, but complained of great pain in the eye, for which reason she was kept in the hospital.

The pain in the right eye and the swelling of the lid remained, and were troublesome.

September 20th the pain in the eye had increased so as to require anodynes. During the last part of October the patient became irritable, and then comatose, and finally died on November 1st, two months and three days after the operation.

It was impossible to secure a post-mortem examination, but death undoubtedly resulted from extension of the disease to the cranial cavity. These tumors were kindly examined by Prof. Kierle, and are both spindle-celled sarcoma.

Butlin[1] says that the larger number of malignant tumors of the upper jaw appear to be carcinoma, usually squamous; while Joseph D. Bryant[2] in the histories of 250 cases gives 71 as sarcomatous to 47

[1] The Operative Treatment of Malignant Disease. London, 1887, p. 128.

[2] Transactions of the Medical Society of the State of New York, 1890, p. 63.

carcinomatous. This would indicate that sarcoma occurs more frequently, the giant-cell variety being the most common.

The early diagnosis and treatment of these tumors are of the greatest importance, as thorough removal in the first stages gives the only hope for these poor sufferers. Partial excision is comparatively a safe operation, but is likely to be followed by recurrence, and should be employed only when the tumor cannot be entirely removed, and even when complete removal is practised the patient should be carefully watched for recurrence.

The complete removal of the superior maxilla has, according to Butlin, a mortality of 30 per cent. This conclusion is reached from a study of 108 cases —42 from the various London hospitals and 66 from German reports. Bryant (*loc. cit.*) reports 183 cases with 26 deaths, or 15.5 per cent. The sources of his statistics are not given, but they are up to a date three years later than Butlin's, and probably contain many American cases.

The question of preliminary tracheotomy is very important. It enables the operator to select the most convenient position for the patient, and undoubtedly increases the ease with which the tumor can be studied and manipulated. On the other hand, the operation of tracheotomy in itself adds something to the danger, and I think it probably increases the liability to septic pneumonia, from the passage of substances from the pharynx into the bronchi. This would naturally be the case, as ability to expel such foreign bodies by coughing is lost.

The operation is naturally accompanied by severe hemorrhage, which, in a considerable number of cases, ends fatally. This is met and limited by rapid operation, and pressure, direct or to the carotids. Some operators recommend the ligation of the common or of the external carotids as a preliminary step. As the ligation of the common carotids has a mortality at least as great as the removal of the bone without it, the procedure is not likely to have many advocates, and probably will be performed but seldom in the future. On the other hand, the ligation of both external carotids is comparatively safe, and facilitates the ease with which the operation can be completed. Bryant also claims that it decreases the growth of tumors to a great extent, and probably retards the tendency to return after removal. From these considerations I believe it to be commendable, and shall in future employ it in every vascular and rapid-growing tumor.

The first case presented by me is of especial interest, because of the occurrence of sarcoma in both maxillæ on the same side, with an interval of about nine years. From the fact that the tumor removed by me was closely attached by a dense pedicle near the glenoid cavity, it seems possible that recurrence took place in the periosteum around the end of the removed bone, and the growth afterward extended to the upper maxilla, illustrating the fact that these tumors tend to recur in the periosteum of the bone when they primarily spring from that tissue.

The second case represents the great rapidity of growth of some of the sarcomata. It was first noticed about four months before removal, and six months before death from extension to the cranial cavity.

The most disappointing feature about these cases is the great frequency of recurrence. Few cases escape this, but with the better understanding of the dangers of these tumors by the laity, as well as by the profession at large, I believe that in the future earlier operations will be done and more permanent cures will result.

Before closing, I wish to refer to one very remarkable operation reported by Mr. Earle, who, in 1831, removed the right superior maxilla for fungoid growth. The common carotid was first tied, and the night after the operation the patient was bled a pint! In spite of this the patient is reported to have recovered. In connection with this I will borrow a quotation from Bryant:

> "Man yields to custom as he bows to fate,
> In all things ruled, mind, body, and estate;
> In pain and sickness, we for cure apply
> To those we know not, and we know not why."

These lines were written by Crabbe one year afterward, and it is barely possible he had heard of this remarkable case treated by this surgical Sangrado.

CLINICAL LECTURE.

TALIPES PLANUS; SUSPECTED FRACTURE OF HUMERUS; FIBRO-LIPOMA; DRESSING OF EMPYEMA AFTER ESTLANDER'S OPERATION.[1]

BY ROSWELL PARK, A.M., M.D.,
PROFESSOR OF SURGERY, UNIVERSITY OF BUFFALO.

THIS patient is a lad of nineteen, who has a variety of club-foot known as "flat-foot" or "splay-foot"—more technically, as talipes planus. There is also the tendency for the foot to rest upon its inner border, known as talipes valgus. I have here the foot and leg of a skeleton, showing that the normal foot contains a bony arch, the weight of the body resting on the heel, the outer side of the foot, the ball of the foot at the extremity of the metatarsus, and the toes. In the condition of talipes plano-valgus, both the antero-posterior and the lateral arches are flattened out and the whole surface of the sole comes on the ground. But this is not all. I find here a positive change in the shape of the tarsal bones, of just how many I do not know, but the astragalus, which in the normal foot never protrudes in any

[1] A clinical lecture delivered at the Buffalo General Hospital.

direction, bulges out beyond the external malleolus, while there is a corresponding depression on the inner side of the foot. There is, however, no true luxation of any of the tarsal bones.

This condition began when the boy was old enough to work on a farm. In spite of his youth he is as large as most adults, and his tarsal bones and ligaments, which were doubtless strong enough to bear a weight of a hundred pounds, have yielded under a weight of a hundred and fifty pounds. If the patient could have led an easy life, probably this condition would not have arisen, but he is a poor Swedish boy who has had to do a man's work. Some of you might be inclined to ask what harm the flattening of the foot does and whether it is not to be regarded rather as a personal deformity, of little consequence to one who has not the opportunity to participate in social life. In reply I might call your attention to the improbability of a boy in his position seeking relief for purely cosmetic reasons. As a matter of fact, flat-foot is not usually painful unless it is subjected to much strain from the person's being continually on his feet. Any joint or series of joints that have to work in an improper position are strained in parts where there is no natural provision or protection against strain, and so this very condition has received the name talipes planus *dolorosus*. I can put this young man to bed and make him perfectly comfortable, but he will suffer as soon as he gets up and puts his weight on his feet. I can relieve him by dressing his feet in plaster-of-Paris, so as to give them an external support, but this treatment would have to be kept up for six months or more. It might be seen that the arch of the foot could be restored by building up the middle of the sole of the shoe, but there are objections to this method of relief.

You will notice that by twisting the foot inward I can restore the arch and make the outer side the lower, as it should be. In a child, I could probably restore the foot to its normal shape simply by holding it in this position by plaster-of-Paris for a long time. It has been suggested to hold the foot in this position for a little while and then to apply the actual cautery to the inner side of the foot and the sole, in a series of linear stripes, going down to the tendon-sheaths. The cicatricial contraction which results will shrink the plantar fascia so as to hold the arch of the tarsus in place. This method is available in moderate degrees of flat-foot, especially in young children, but it requires a long time before the cicatricial tissue is firm enough to be put to the test of actual use. In an adult, and this lad has almost attained his growth, I prefer to give an anesthetic, and, applying an Esmarch bandage so as to make the operation bloodless, to remove a wedge-shaped mass from the tarsus, mainly from the astragalus, and bring the parts together with strong sutures. In order that the result of the treatment may be plainly shown, I have had two plaster casts made of the feet in their present state of deformity. No weight rested on the feet while the casts were being taken, so that the deformity is not seen at its worst.

The feet have been cleaned and rendered much whiter than I thought possible by prolonged treatment with hot water and liquor potassæ. After washing the foot again with bichlorid of mercury solution, the Esmarch bandage is applied so as to strip the blood up toward the knee and the tourniquet secured. The incision is made longitudinally over the prominence of the astragalus. The bone is chiselled away and the parts brought together so as to close the gap in the tarsus. You can see that the arch is now quite well restored; the fascia and superficial structures are united by one set of heavy catgut sutures; the wound is dusted with iodoform, the surrounding area anointed with sterilized vaselin and dressed with bichlorid gauze and naphthalin cotton. The operation is repeated on the opposite foot. Now, in order to prevent all disturbance of the feet, I will surround the antiseptic dressing with a plaster cast applied in the usual manner.

Some of you may have read in the papers of a little Polish girl who had been cruelly beaten and starved by her father, and who was rescued by the Humane Society. This is the little sufferer, who was brought to the hospital a few days ago with her right arm so badly swollen that, even under chloroform, a careful examination was impossible. There is still a great deal of swelling—not so much at the elbow as above. The only safe course in diagnosticating fractures is to compare opposite limbs. At the elbow the three prominent landmarks are the condyles of the humerus and the olecranon, which should be in the same horizontal plane with the arm flexed at a right angle. By comparing the two sides, even a slight disturbance of the normal relations of these three prominences may be detected. In this case they seem to be in the same relative position on each side. Complete extension of the arm causes no pain, and it is only when flexion is carried beyond a right angle that complaint is elicited. Although fracture has been suspected, we must remember that the pain may be due to a sprain, to cellulitis, or to other inflammation about the joint. At various places you can see where ecchymoses are fading away into a greenish-yellow discoloration. It is now a week since the patient was brought to the hospital, and although I cannot say absolutely that there has been no fracture, I can say that the parts are at present in their normal position, and there is nothing to do but leave the arm at rest, applying an absorbent ointment of ichthyol and blue ointment diluted with lanolin. A splint has been kept on as a precautionary measure. I see no further indication for anything more than a triangular splint to keep the parts at rest.

A year ago we had a patient in the hospital from whose arm I removed a pedunculated lipoma as large as his head. He has shown his appreciation by sending in another patient, with the message that "out in his part of the country there are lots of men with bunches, and he is going to send every one of them here." The present patient is a middle-aged laborer, with a tumor at the back of his neck. It has grown slowly for years; it is painless, and gives him no trouble except the inconvenience of preventing him from wearing a shirt and collar in the ordinary way. It is somewhat soft, and without being actually fluctuating, it is movable in the deeper tissues and the skin is movable over it. It is undoubtedly benign and probably is composed of fat. Now that the patient is entirely relaxed by the anesthetic, it seems more elastic, as if there were fluid confined in a sac or, on the contrary, a more consistent mass than the ordinary lipoma. I expose it by an incision about fifteen

centimeters long and find a solid tumor. There are no important vessels or nerves to avoid, and I can proceed rapidly with the enucleation. You see it is quite nodular, some parts being almost separated from the main tumor. A few vessels require ligation. The raw surfaces are brought together by buried sutures, to check the capillary oozing and get more speedy union. The ordinary antiseptic dressing is applied, and over it a large flat posterior splint, which I have had made to fit the trunk and neck, so as to immobilize the parts. This will be of special service during the restless stage which follows the anesthesia. The wound ought to be healed in a week. On cutting into the tumor, I find an intermixture of fat with quite dense fibrous tissue, so that the growth is properly a fibro-lipoma.

This patient is the one on whom I performed Estlander's operation a few weeks ago. He has been reserved until the close of the clinic because I did not wish to run any risk of infecting other patients with the foul pus which still exudes from the remains of the pleural cavity. You will notice that the dressings are stained green. This is due to the presence of a particular bacterium—the so-called bacillus of green pus—which always indicates a slow and chronic suppuration. The patient, at the time of operation, was in quite a critical condition, and there was a fistula through which pus was constantly overflowing. A free incision was made, and on lifting up the flap containing the resected portions of several ribs I could plainly see the motion of the heart inside the pericardium, which was covered with granulations. Already there has been a marked collapse of the chest-wall to meet the lung, which could not expand to meet the thorax wall. The patient is in better spirits since the operation, and he will be, I hope, a healthy man, if not a symmetrical one. Some of you were doubtless surprised to see me remove so much tissue. Yet, at the operation I was hurried so much by the critical condition of the patient that I could not take time to remove all that I wished. Here is a space that will have to fill up with granulation-tissue, because the strength of the patient did not permit the resection of another rib. This operation was thought out first on theoretical grounds, and Estlander had the hardihood to carry it out in practice and show that, desperate as it was, it was nevertheless practicable. Many years ago, when I was a hospital interne, I saw a number of cases of empyema go steadily downward from the exhaustion of hectic fever, without relief. Drainage was made use of, but it was not sufficient in the worst cases. Out of ten operations which I have performed in this hospital, only one patient has died from the effects of operation, and that was a desperate case which had been sent to Buffalo to die. In several cases the openings have been larger than in this case.

The cavity is freely irrigated with a boric-acid solution and the dressing completely renewed. Under the pus you can see healthy granulations springing up.

Pfarrer Kneipp and His Water-cure.—It is reported that the so-called priest-physician of Bavaria has been called to Rome to advise Pope Leo on matters of health. The "Wunder-doktor" has advised cold bathing, and has predicted for his Holiness "several more years of life." It is said that the now-aged Pfarrer receives "over several hundred patients" daily.

CLINICAL MEMORANDA.

THREE CASES OF PNEUMONIA FOLLOWED BY MANIA.[1]

BY J. B. CAMPBELL, M.D.,
OF LONDON, CANADA.

CASE I.—In the spring of 1874 I was called to see a young man, twenty years of age, who had been ill for over a week with pneumonia.

He was treated by a neighboring physician who reported favorably concerning the case from day to day, and finally about the seventh day pronounced him out of danger. About twenty-four hours later the physician was again summoned in great haste, and on his arrival he found that the patient after sleeping soundly awoke in a wild delirium. The physician ordered food and stimulants, but on his return in the evening there was no improvement. The next morning, the man being still wild and maniacal, I was called in and found that he was required to be held in bed.

On examination I found the patient with a fast pulse, cold and perspiring skin, pallid face, and lungs clear or nearly so.

I advised the treatment, which consisted of brandy and milk, with a mixture of ammonia and camphor, to be continued. The patient died during the night. The physician informed me that he had thought the case one of ordinary right-sided pneumonia, and he could not account for the sudden change and delirium after he had about given up the case as cured.

CASE II.—On February 14, 1880, I was called to see a young man of about sixteen years of age, who on the evening before, and about fifteen hours before I saw him, was taken with a chill. I found him with face flushed, perspiring, the pulse full and strong (120 per minute), and with a temperature of 105°. He complained of pain in the right side and his breathing was short and quick; rusty sputa, hacking cough, dulness of the lower lobe of the right lung and crepitation in the upper lobe were present. The left lung was normal or nearly so. I ordered a hot bran-poultice, which was on the chest, to be continued, and prescribed the following:

R.—Liq. ammon. acetat. . . . . ℥j.
Spt. æther. nit. . . . . ℥iv.
Tinct. aconit. . . . . gtt. x.
Aquæ . . . . . ad ℥vj.
Sig.—A teaspoonful every hour.

On February 15th the pulse was 110, the temperature 104°, the cough free, and the sputa considerably tinged with blood. There was no delirium, except for a few moments after waking from sleep. On February 16th, 17th, and 18th the case seemed to progress favorably. On the 19th the temperature was 102.5°, the patient was a good deal better, the expectoration was free, and the cough was nearly gone. I changed the medicine and gave:

R.—Ammonii carb. . . . . gr. ij.
Ext. scillæ et senegæ . . . gtt. j.
Syr. simplicis . . . . . ℥j.

[1] Read before the London Medical Society.

every three hours. I felt well pleased with the progress the case was making, and the family did also; all agreed that the patient was getting on better than a brother did whom I treated for the same disease a year previously. On February 20th the temperature was normal, the appetite was returning, and the patient felt nearly well. I discontinued the poultice, and wrapped the chest in cotton batting, with a bandage. I ordered the last mixture continued, with milk, beef-tea, etc. On February 21st I was summoned early in the morning and was told that the patient awoke from sleep, became delirious, and was wild most of the night, the nurse being unable to keep him in bed. I hurried to him and found him sitting up in bed and pulling the bedclothes. He appeared to be afraid of those about him; his face was pale, with a maniacal expression, his pulse was fast, he had no cough, his lung was nearly clear, his temperature subnormal, his skin cold and bathed with perspiration. He appeared to recognize me when I spoke to him and quieted himself. I covered him well with blankets and ordered hot bottles in the bed; I gave spts. ammoniæ aromat., digitalis, and brandy, and left. I was again sent for in the evening, and on arrival I found him worse than in the morning, although his mother told me that at times during the day he was rational; the pulse was now weak and irregular. He was afraid and saw soldiers coming to take him away, and also had hallucinations of hearing. He fought, pleaded, and wept, till finally he threw himself across the bed exhausted, sobbed a few minutes, and then died, about thirty hours from the advent of the mania.

The loss of my patient caused me a great deal of worry. The family had unbounded confidence in my skill and ability, as well as in my honesty. The manner, however, in which I reported progress from day to day till the last, when it was apparent to all that there was no hope, caused the family and friends to censure me very much; some of them thought I must have known better, while others attributed my actions to ignorance. This case brought back to my mind the first case reported, when the other physician had to bear the blame and censure of the friends.

Case III.—On April 10, 1890, I was called to see a farmer's son, fifteen years of age, whose mother informed me that he had been sick for nearly a week; he was taken with a chill while working in the woods, and had had cough and fever since. This morning she noticed rusty-colored sputa and sent for me. I found the temperature 104.5°, the pulse 125, and respiration 60; the face was flushed and dusky, the tongue coated and moist; there was pain in the right side, with hacking cough, crepitation in the lung, from base to apex. The left lung was nearly normal.

I prescribed a mixture of liq. ammon. acetat., spts. æth. nitros., and aconite, to be given every hour, and ordered a linseed-poultice with mustard to the chest. On April 11th in the morning, the pulse and temperature were still about the same, the respiration 55, and perspiration was free. He did not rest well the night before, but complained of the pain. I left a powder containing quinin, gr. iij, Dover's powder, gr. v, to be given at night, and advised the other treatment to be continued. On April 12th the patient slept better, and did not have much pain, but was somewhat delirious; there was no change in temperature or pulse. The respiration was about 50. On April 13th and 14th the symptoms were about the same. On April 15th, when I entered the room, the sight of my patient sent chills over me, as the memory of the second case reported was brought to my mind. The expression of the face was exactly the same—it was pale and perspiring; the temperature was 94°, the pulse 60, and respiration 16. The patient was delirious during the night and the nurse had to hold him in bed. The delirium came on after waking from a "quiet and nice sleep," I was informed; he had rational intervals, but required to be held most of the time.

I prescribed the following:

R.—Tr. digitalis . . . . . jss.
Ammon. carb. . . . . ʒij.
Spt. frumenti . . . . . ʒiv.
Sig.—ʒij to be given every hour.

I ordered hot water to his feet and that he be wrapped in warm blankets. On April 16th the temperature was 97.5°, pulse 70, mind rational, and appetite better. On April 17th the temperature was normal. I dismissed the case, which made a good recovery.

I never could satisfy myself as to the cause of the sudden maniacal delirium coming on after the fever was all gone. I read all the text-books on practice that I could get (some dozen or more) and I found in none of them anything that enlightened me on the cases. The only solution of the question I find is in works on insanity—for example, that of Griesinger, who gives an account of insanity following pneumonia and other febrile diseases. Blandford also reports cases and cites Weber on the subject in the *Medico-Chirurgical Transactions*, vol. xlviii. Dr. Clouston in his Morisonian Lectures, 1875, also gives particulars of ten cases of "post-febrile insanity."

The common features that strike one in these three cases are the youth of the patients, the appearance of the mania after a sound sleep, its short duration, and the fact that in all three the pneumonia was right-sided. They were all of neurotic families. The fatal termination of two of the cases by exhaustion would indicate the necessity of procuring sleep or rest at all hazards.

Were I to encounter a similar case, I should not hesitate to administer opium along with my former treatment.

TWO CASES OF FUNCTIONAL NERVOUS DISEASE TREATED BY TENOTOMY OF THE SUPERIOR AND INFERIOR RECTUS MUSCLES.

By HOWARD F. HANSELL, M.D.,
of Philadelphia, Pa.

The following cases demonstrate, individually, the rôle played by a want of equilibrium in the ocular muscles, demanding constant and unconscious effort to maintain single and clear vision, in producing disturbances of the nervous system, simulating organic disease, and the marked amelioration of the symptoms following restoration of the equilibrium.

The conservative physician demands proof, or at least undisputed evidence of the trustworthiness of new therapeutic agents, before adopting the suggested line of treatment and risking his patient's health and his own

reputation by displacing older, well grounded, and authenticated methods, although perhaps unsatisfactory.

Current ophthalmic literature seems to indicate a more general belief in the theory, advanced by Stevens, of the causative relation of anomalies of the ocular muscles to functional disease of the nervous system, than prevailed for some years after the publication of his Belgian Prize Essay and his series of articles in the *Archives of Ophthalmology*, at least in so far that opportunities for personal investigation are availed of after therapeutic efforts in other directions have proven unsuccessful.

The subject is attractive to both ophthalmologist and neurologist—to the former, in widening his limited field of practice, and to the latter in suggesting for his consideration a means of cure, in properly selected cases which have not yielded to his other therapeutic resources.

I am indebted to my friend Dr. K. C. McWilliams, of Philadelphia, for the opportunity to see in consultation and to present to the attention and judgment of the profession the two cases described herewith. I have endeavored to limit the clinical histories to a bare statement of facts and have purposely omitted comments.

Case I.—Miss R., aged sixteen, a school-girl, of good family history, with no inherited neurotic tendencies, consulted Dr. McWilliams in May, 1893, on account of epilepsy. Her mother related that the first seizure was excited by the horror of seeing a brother drown two years before. The attacks have very gradually increased in frequency until the present, when they recur

Fig. 1.

Miss R., one week before operation.

three and four times in the week. Without warning, she becomes unconscious, falls if standing, has a slight general muscular spasm or convulsion, recovers after a few seconds, and eructates large quantities of gas. She complains also of severe headache and vertigo after an hour's close application to her books. She makes no mention of the facial spasm conspicuously shown in the photograph. In spite of treatment directed to both the nervous system and the eyes, by various specialists, during the past two years her symptoms have increased in severity. Refraction under atropin = + 0.75s.= 6/6, O.U. Left hyperphoria $2^{\circ} - 3^{\circ}$. Lateral muscular action inconstant; at times esophoria, more frequently exophoria. Occasional diplopia. No lesion of media or fundus.

Prisms to correct the hyperphoria were worn for one week with great benefit. On June 20th, tenotomy of the left superior rectus was practised and the muscular equilibrium established.

The relief to the epilepsy, headache, and vertigo was immediate and absolute, and to this date (February 6, 1894) has continued.

Fig. 2.

Miss R., a few days after operation.

Case II.—Miss O., aged nineteen, a weaver, without inherited diathesis, consulted Dr. McWilliams, October 13, 1893, complaining of severe asthenopia of six months' duration. Attempts to use the eyes for close work were attended with pain in the head and eyes and frequently with nausea, vertigo, and loss of conciousness, without general muscular spasms. In the absence of known organic disease and from the close connection of the periods of unconsciousness with use of the eyes at the near-point, the girl properly concluded that the source of her trouble must be in a derangement of the ocular apparatus. She had not placed herself under medical treatment during the preceding six months, but had consulted two ophthalmic surgeons and had worn various spherical lenses without benefit. The diplopia has recently become a nearly constant symptom. Left hyperphoria = 4°. Exophoria alternating with esophoria at 6 m. Exophoria in accommodation. Refraction under atropin = 1D = 6/6, O.U. No lesion of media or fundus was present. Prisms correcting the hyperphoria were worn with comfort for seven days. October 29th, tenotomy of the left superior and right inferior rectus gave perfect binocular fixation.

Miss O. has been relieved of headache, vertigo, and fainting attacks and has been able to resume her occupation. She still has some asthenopia in reading.

These cases demonstrate the necessity for including an examination of the ocular apparatus in determining the cause of functional disease of the nervous system.

A CASE OF PRIMARY CARCINOMA OF THE BODY OF A DIVIDED UTERUS.

By CHARLES B. PENROSE, M.D.,
Professor of Gynecology in the University of Pennsylvania, Philadelphia.

The following case of primary carcinoma of the body of a divided uterus possesses enough points of pathologic interest to merit report:

M. L., a white woman, forty-nine years old, was admitted to the hospital of the University of Pennsylvania in September, 1893. Menstruation had begun in her sixteenth year and had always been irregular, occurring every two, three, or four weeks. The bleeding had

always been excessive and had continued from one to three weeks. There had been no dysmenorrhea. The last menstrual period had occurred five months before admission to the hospital.

For about one year before admission she had suffered with pain in the hypogastric and sacral regions, increasing vesical and rectal tenesmus, and increasing loss of strength and weight. There had been no leukorrhea. She was unmarried and had never been pregnant. Her appearance upon admission was anemic. The skin was sallow; there was general emaciation. The temperature was 100°, the pulse 138.

Examination showed normal external genitals. The ostium vaginæ was normal in size. The vagina was divided into lateral halves by a fleshy septum in the median line, extending from a half-inch above the ostium to the uterus. Into each half of the vagina projected a cervix uteri of normal size and shape. A hard polyp—about a half-inch in diameter—protruded from the os of the right cervix. The uterus was irregular in shape, nodular, much increased in size, and adherent.

The history of the case—the irregular profuse bleeding from the uterus, the delayed menopause, the pelvic pain and tenesmus, and the emaciated and sallow appearance occurring at the menopause—suggested the diagnosis of uterine fibroid which had undergone sarcomatous degeneration. The physical examination revealing a hard uterine polyp and an enlarged nodular uterus, increased the probability of this diagnosis.

Exploratory celiotomy was performed two weeks after admission. The radical operation was found to be impossible, as the uterus was adherent to the sigmoid and other pelvic structures by extension of the tumor. Eight or ten inches of the sigmoid flexure and the descending colon were involved. After recovery from this operation the woman left the hospital, and died of exhaustion two months later. The uterus, vagina, and vulva were removed post-mortem, and were submitted to pathologic examination by Dr. Beyer.

Pathologic Report.—Growing from and infiltrating the uterine body is a tumor the size of a cocoanut. The cervices are equal and well-developed, of normal size, and patent. From the right cervical canal grows a mucous polyp about the size of a hickory-nut. The uterus is divided into two lateral parts by a septum extending to within a half-inch of the fundus. The uterine cavities are about the same size, and of the normal length. The vaginæ are well-formed, of equal size, admitting easily two fingers. The septum extends to within a half-inch of the ostium vaginæ; below this there is, posteriorly and anteriorly, a partial septum. The vaginal walls are three-quarters of an inch in thickness and carcinomatous infiltration can be detected to within an inch of the vulva. The base of the bladder is infiltrated by carcinoma. Microscopic sections from the uterine bodies and the cervices show complete, and from the posterior bladder and vaginal walls partial, carcinomatous infiltration. The carcinoma has evidently originated in the body of the uterus and has secondarily involved the cervices, bladder, and vaginal wall.

The fact that the microscope showed that the vaginal walls were infiltrated with carcinomatous tissue to within one inch of the vulva is of great interest from the operative point of view. It shows the impossibility in any case of malignant disease of ascertaining with the eye or finger, at the time of operation, the extent to which the disease had infiltrated. At the time of the exploratory operation, two months before death, the vagina and vaginal cervices appeared perfectly healthy, and yet the microscope would probably have shown beginning carcinomatous change. It is probable that many cases of so-called recurrence after hysterectomy for malignant disease are really cases of continuation of a pathologic process which had been unrecognized at the operation.

THERAPEUTIC NOTE.

A CASE OF PAROXYSMAL TACHYCARDIA, OF LONG STANDING, RELIEVED BY THE USE OF BEECHWOOD CREOSOTE.

By W. T. S. CORNETT, M.D.,
of Madison, Indiana.

It is proper to state that the writer is both physician and patient in the case to be described. The patient is an octogenarian, and for the last forty years has been more or less subject to chronic rheumatism. Twenty years ago, after taking unaccustomed exercise on foot for several days in succession, I became much fatigued, and, as a consequence, the rheumatism was aggravated. Shortly after this increase of rheumatism, obscure disease set in, difficult to diagnosticate, but which, on further observation and study, proved to be endocarditis. This attack occurred late in the fall, and I was confined to bed most of the time all winter with a low grade of fever, and with persistent insomnia. I was not conscious of having slept at any time during the winter, yet there must have been unnoticed sleep. No hypnotics were used. There was one paroxysm of pseudo angina pectoris during the winter, which was promptly relieved by swallowing a spoonful of ether that happened to be at hand. When spring came, the febrile condition subsided, and sleep returned, and outdoor exercise was also resumed.

There are members of the profession who think that rheumatic endocarditis occurs only in the acute form of the disease, but there is high authority for saying that it also occurs in the chronic form. Endocarditis seldom proves fatal, but those who are so unfortunate as to have had it seldom, if ever, completely recover from its consequences. Paroxysmal tachycardia is the result in the case under consideration. Shortly after recovery from the endocarditis, I would awake at night, finding myself too hot, and the pulse up to 120 or 130 per minute, making the impression on my mind that I was having an attack of fever that would confine me to bed; but to my surprise, when morning came, the pulse would be down to 70, and the sense of heat gone. These paroxysms did not occur every night, or every other night, or at any particular hour of the night, but always at unexpected times. After a time, they commenced occurring in the daytime, often many of them per diem, and most of them of short duration. These paroxysms were unaccompanied by pain, but I could always tell when they occurred by a sense of commotion at the heart. Then placing the finger upon the pulse, and holding it there a sufficient length of time, it would be found to drop sud-

denly from 120 or 130 to normal (70). This is a paroxysm of tachycardia, of sudden and unexpected onset, and with sudden termination at an uncertain period. I was thus afflicted for twenty years, when a bronchial trouble occurred, with a glutinous expectoration, very difficult to eject from the throat. For this bronchial trouble it was determined to test beechwood creosote as a remedy. Under its use for a week or ten days the expectoration was relieved, the cough mitigated, and, to my surprise and gratification, the paroxysmal tachycardia had disappeared. The sudden cessation of this long-standing motor affection of the heart can be attributed to nothing but the action of the creosote. I had for a long time believed that these paroxysms were caused by aortic regurgitation from valvular insufficiency, causing the heart to struggle for the relief of the distended ventricle; this being accomplished, the pulse would suddenly fall to normal. The action of the creosote in this case showed conclusively that the tachycardia was not caused by valvular insufficiency, but was purely functional. Post-mortem examinations in other cases have shown that the affection under consideration can, and does, have an existence when there is no structural disease of the heart. Dr. G. W. Jacoby read a paper some time ago before the Academy of Medicine in New York, in which he says that paroxysmal tachycardia is a disease of adult life, the etiology being obscure. "The best-established causes are bodily and cerebral overwork. In these cases, it seems probable that the condition is a bulbar neurosis." Dr. Herter referred to a case in a man who suffered from intestinal indigestion, and suggested that the mechanical distention of the colon and other portions of the intestines, as well as the poisonous products of indigestion taken into the blood, may act as a cause of the paroxysms.

Under the use of creosote three times per day I have now had exemption for more than seven months, with the exception of a few slight returns when the medicine has been neglected. Cure, in the proper sense of that term, is not claimed in this case, but exemption is being purchased at so cheap a rate that it is nearly equivalent to cure. The relief is very great indeed.

The question now arises as to the *modus operandi* of creosote in the case under consideration. It is admitted that an answer completely satisfactory to this question cannot now be given. The heart, after the attack of endocarditis, has been left in an irritable condition, from which complete recovery is perhaps impossible, especially in one of advanced age. Creosote is a tonic, and the most reliable intestinal disinfectant of which I know. It prevents fermentation in the stomach and intestines, and thus there are no poisonous products to be absorbed and taken into the blood, and there is high authority for saying that it combines with and renders innocuous poisonous products that reach the blood from other sources. "It is interesting to note that quite recent researches indicate that the good effects of the creosote, or guaiacol treatment of pulmonary tuberculosis, are due neither to the colyseptic (or development-hindering) properties of guaiacol, as some authors, including Guttmann, the originator of the treatment, believe, nor purely to its stomachic and tonic virtues (as others have asserted), but to the fact that it forms compounds, eliminable from the blood in a dissolved state, with the toxic albuminous by-products of the activity of the tubercle-bacillus. (Hoelscher and Seifert.) It is to these albuminoids that the fever, night-sweats, and disturbances of appetite, digestion, and general well-being must be ascribed, and with their removal or conversion into inert compounds, all these symptoms disappear." (See Helbing's *Modern Materia Medica*, 1893.) Creosote lessens the irritability of the bronchial tubes, and thus frequently relieves cough. Two-thirds of the creosote that enters the blood is eliminated by the kidneys, and the lining membrane of the heart is constantly being bathed with blood holding the medicine in solution as long as the treatment is continued.

There are several grades of creosote to be found in the shops, made from coal-tar. These should never be used as medicines. Creosote made from beechwood tar, and with a reliable brand, should always be prescribed. The dose in the case under consideration was one drop three times a day, after eating, and now, at the end of seven months, has not exceeded two drops three times a day.

NEW DEVICE.

AN AXONOMETER.

By JAMES THORINGTON, M.D.,
INSTRUCTOR IN DISEASES OF THE EYE IN THE PHILADELPHIA POLYCLINIC.

In making use of the shadow-test as a ready and rapid method of estimating errors of refraction, the direction of the principal meridians of corneal curvature are often difficult to determine, and the statement of the patient must be accepted when confirming the correction, or if there is still uncertainty, the ophthalmometer of Javal must be brought into use.

At my suggestion, Messrs. Bonschur & Holmes, of this city, have constructed a very simple instrument, which, for want of a better name, I have called an axonometer, a cut of which is here shown. It is a gutta-

percha disc, one and one-half millimeters in thickness, of the diameter of the ordinary trial-lens and mounted in a cell of the trial set with a milled edge. It has a central round opening twelve millimeters in diameter, the diameter of the average cornea at its base.

Two heavy white lines, one on each side, pass from the circumference horizontally across to the central opening, bisecting the disc. To use the axonometer, place it in the front opening of the trial-frame, and with the patient seated erect, and the frame accurately adjusted so that the cornea of the eye to be refracted

occupies the central opening, proceed as in the usual method of making the shadow-test.

As soon as that lens is found which corrects the meridian of lowest refraction, and the band of light appears distinct, turn the axonometer slowly until the two heavy white lines accurately coincide, or appear to make one continuous line with the band of light. The degree-mark on the trial-frame to which the heavy white lines then point is the exact axis for the cylinder.

The little device seems to possess the following points of merit:

1. Simplicity.
2. Accuracy.
3. Small expense.
4. It covers an unnecessary part of the trial-lens, which too frequently gives annoying reflexes and images.
5. It saves time, avoids the statement of the patient, and renders the ophthalmometer unnecessary.
6. Its color (black) absorbs the superfluous light-rays from the skiascope, and gives a stronger contrast to the reflex and central shadow.
7. Limiting the field of vision in children, it permits of more concentrated attention.
8. For children and nervous patients, when it is difficult to use the ophthalmometer, this simple appliance is of great service.

To add to the usefulness of this instrument (which is also made plain, as described), I have had stamped on its periphery, in white lines and figures, the degrees in reverse order to those on the trial-frame, thus making it a very serviceable cylinder protractor.

1630 Arch Street.

MEDICAL PROGRESS.

A Woman with Two Distinct Uteri.—At a recent meeting of the Philadelphia County Medical Society, Dr. Hannah T. Croasdale reported the case of a woman, aged sixty-three years, who came under observation for treatment for an abdominal tumor. Twenty years before, she had noticed some enlargement of the abdomen, which in five years had reached its existing dimensions. No discomfort had been felt (except from the size) until recently, when she had experienced pain and pressure-symptoms, and the bladder and rectum had become very irritable. The menopause occurred at fifty, and at that time the woman was confined to bed for several weeks, but no especial reason for this could be learned. Her condition on admission was not very good, although no definite trouble could be found except a systolic heart-murmur. Lungs and kidneys were in good condition. Pelvic examination externally showed a regular enlargement of the abdomen, and there was percussion-dulness from the symphysis pubis to the umbilicus and almost from crest to crest of the ilia, with a small area of tympany on the left side.

On making digital examination *per vaginam* the cervix uteri seemed small, apparently having undergone senile atrophy, and it was pushed backward and high in the pelvis, the whole uterus also being pushed backward. It was thought that the fundus looked forward, but the uterine sound did not pass readily, hence its use was not persisted in. What seemed to be a fluctuating tumor was appreciated *per vaginam* to the right of the uterus and above the brim of the pelvis, and a small, tender mass was felt in the right parametrium. The patient complained of pain and tenderness when touched, especially on the right side. A diagnosis of fibro-cystic tumor of, probably, the uterus was made, and, after the usual preparation, the patient was etherized and the abdominal cavity opened. The omentum was found to be greatly thickened and congested, and extensively attached to the tumor beneath it and to the pelvic walls. It was necessary to ligate and cut in many places, and upon pushing the omentum aside the tumor looked pale and felt and looked like a fluctuating mass. A trocar and canula was used, but no fluid flowed through the canula.

The incision was now extended in the abdominal wall upward sufficiently to admit of the withdrawal of the mass entire.

A small nodular mass, attached to the lower part of the tumor, having the shape and size of the uterus and furnished with what seemed to be the uterine appendages, was drawn out of the lower end of the wound, and was found to be attached by a small cord-like pedicle to the pelvic brim, a little below the crest of the left ilium. Another body, to all appearances a uterus with its appendages, was found in the pelvic cavity and fixed by the usual attachments, but crowded into Douglas' pouch. The slender pedicle, not larger than a pencil, which tethered the smaller mass to the pelvic wall, was ligated and cut.

The tumor being now freed from its attachments, which were omental entirely, was lifted from its bed. This growth must have derived most, if not all, of its nourishment from the establishment of the circulation through the omentum, for it had almost severed its attachment from other structures, and the omental vessels were enormously enlarged.

The abdominal cavity was cleansed and the opening closed with silkworm sutures, the dressings applied, and the patient put to bed. Reaction was prompt and good. The temperature for the first four days ranged from 99° F. to 100.4° F. It then rose, and on the sixth day reached 102.6° F., and on the ninth day 105.4° F., when the woman died of septic intoxication.

The autopsy showed purulent infiltration at various points in the pelvic cavity. There was also found at the autopsy a uterus and appendages in a healthy condition and in the proper position.

Sections from the little body which hung from the large tumor were sent to two pathologists. One reported the specimen as being that of the structure of a fibro-myoma. The other pronounced it uterine tissue, and some structure resembling the endometrium.

This second uterus had developed from its *cervix* a fibro-myoma. As it grew too large for the pelvic cavity and rose above the brim, the little organ was inverted and so hung suspended from it.

It measured one and one-quarter inches from the internal os to the fundus. The length and size of the cervical portion were exaggerated, evidently from the tension upon it, but as it was cut open in the fresh state it showed quite distinctly the arbor vitæ arrangement o the mucous membrane lining the canal, and the lips and cervical canal were quite natural in appearance. The

os internum on the left side admitted the passage of a small probe, which passed a little distance along the Fallopian tube. On the opposite side the opening would not admit of the passage of the probe. There were two small ovaries which, on being cut open, showed on macroscopic inspection ovarian tissue. No microscopic examination of this tissue had been made. In the cervical canal, just below the internal os, was a small calcareous deposit.

Successful Dilatation of a Constricted Pylorus.—O'Hara (*Australian Medical Journal*, vol. xv, No. 12, p. 615) has reported the case of a woman, thirty-nine years old, who for two years had suffered with impaired digestion and failure of appetite, and who for six or eight months had been growing progressively worse. There was frequent nausea, attended with vomiting, especially in the morning. Food was frequently rejected shortly after being taken. The ingestion of food was attended with a sense of weight and oppression in the epigastrium, flushing of the face, a bad taste, and dryness of the mouth, with palpitation of the heart. For a year there had been slight redness on the left side of the root of the nose, which had spread to the alæ, and later appeared on the forehead and the cheeks. This condition had been growing worse for three months, and was attended with tension of the skin, bright hyperemia, and burning pain. Forty-two pounds in weight had been lost in five months. On physical examination the stomach appeared dilated and the pylorus thickened. For a time lavage and tonic treatment were employed, but the symptoms persisting, an exploratory examination of the pylorus was determined upon. The contents of the stomach were evacuated by siphonage, and boric acid introduced into the cavity. After the abdominal cavity had been opened, an incision was made with a blunt scissors into the anterior wall of the stomach near the pylorus. The gastric contents were caught upon sponges. The pyloric orifice was found to be constricted, and by means of an ivory glove-stretcher was sufficiently dilated to admit a finger. The dilatation was continued until another finger could be introduced. The wound was then closed and the patient returned to bed. Recovery was uninterrupted, and in the course of the following six weeks the woman had gained twelve pounds in weight. Three years later her health was still good.

Diphtheria of the External Auditory Canal.—Treitel (*Deutsche medicinische Wochenschrift*, 1893, No. 52, p. 1388) has reported a case of pharyngeal diphtheria, in a child three years old, in which, notwithstanding the absence of involvement of the middle ear, membrane formed in both external auditory canals, upon the left side involving also the auricle. Bacteriologic examination of a portion removed disclosed the presence of bacteria that resembled diphtheria-bacilli, but cultures were unsuccessful. The child died from cardiac asthenia.

THERAPEUTIC NOTES.

Poisoning by Chloralose.—Williams (*Practitioner*, No. 308, p. 98) has reported the case of a highly neurotic woman, forty-two years of age, in whom toxic symptoms appeared after taking ten grains of chloralose on each of two successive nights. The patient had for a number of years suffered from "spinal neuralgia," among other symptoms of "neurasthenia," although not hysterical. Her pulse was always feeble and small, though regular, but there was no indication of cardiac disease. Complaining of neuralgic pain in the lumbar region, extending round the abdomen and preventing sleep, the woman was one night given ten grains of chloralose suspended in milk, with which she had a fairly good night. She complained of the bad dreams that the drug had induced, but there were no disagreeable after-effects on the following morning. At night the woman took another dose of ten grains of chloralose. Half an hour later she became very excited and restless, and soon began calling out. This condition of acute delirious mania continued for several hours, the woman appearing conscious of the presence of others, but apparently not recognizing anyone. Her pulse was unusually good; the pupils were unaffected; restraint was forcibly resisted, especially on attempts to give a hypodermatic injection, such as she had frequently received on other occasions and the nature of which she appeared to recognize. An injection of quarter of a grain of morphin, followed in half an hour by another of a sixth of a grain, did not produce any quieting effect at all. Recovery, however, took place in the course of a few hours more, although the woman was wholly unconscious of what had taken place. On the following morning she was prostrate, but without headache, and without recollection of anything that had happened after the taking of the dose of chloralose.

Poisoning by Diachylon Ointment.—Passler (*Münchener medicinische Wochenschrift*, 1894, No. 5, p. 84) has reported the case of a child, a year and a quarter old, that had an attack of erysipelas of the head at the age of four weeks, from which it made a good recovery, without complication. Shortly thereafter a generalized eczema developed, which resisted ordinary therapeutic measures. For this condition a gauze bandage, upon which a thin layer of diachylon ointment was spread, was applied to the lower extremities. The eczema soon assumed an improved appearance, but the child became unusually quiet and apathetic, while marked edema developed in the lower extremities, and but a few drops of dark, cloudy urine were passed in the twenty-four hours. The bandages were at once removed, and the ointment detached by means of a warm bath. Examination of the urine disclosed the presence of albumin, blood, colorless and red corpuscles, hyaline and granular casts, with epithelial cells and blood-cells. The mucous membrane of the mouth was red and swollen, and there was an excessive secretion of saliva. The child gradually improved and the symptoms successively subsided, although dilatation of the left ventricle made its appearance. All of the abnormal manifestations, however, finally disappeared. The presence of lead could not be detected in the urine, and there was no blue line on the gums. Partly by a process of exclusion, and partly by a correlation of attendant circumstances, the conclusion was reached that the whole train of symptoms owed their origin to the absorption of the lead contained in the ointment employed in the treatment of the eczema.

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THE COMING SANATORIUM.

AN artificial sanatorium, ideal in character and strictly unobjectionable as a refuge for invalids, does not exist. In fact, until the more recent evolutions and revelations in biologic, physiologic, and therapeutic knowledge had made known the decided and growing necessity for it, such an institution was an impossibility, because yet uncalled for and unconceived. But the search-light of alert and reinforced modern science has now thoroughly warned us of the inadequacy of the older methods of constructing and administering health-institutions. The demand for a new system and new conditions to meet the new requirements and to obviate the systems now in vogue, is being widely recognized and is daily becoming more pronounced. As evidence of this fact, leading medical journals and sanitary publications are all directly or indirectly agitating the subject; and already in several States, legislation looking toward a better appreciation of dangers that constantly menace the community through non-observance of sanitary precautions formerly overlooked, but now known to be of vital importance, is being enacted. Witness the action of the American Health Association, the Pan-American Medical Congress, the French League for the Prevention of Tuberculosis, the Philadelphia Society for the Prevention of Tuberculosis, etc., as referred to in a recent issue of THE NEWS.

The revolution, or more properly the stage of evolution, is therefore upon us, whether we fully realize it or not.

To elevate the art of medicine to a standard quite equal to that already attained by her sister arts, and to advance her well on toward the dignity of a science, to which proud appellation she as yet has no strongly-valid claim, at least two fundamental objects must be kept to the fore:

1. To make more generally available, in the treatment of human diseases, defects, and deformities, all such rational methods, influences, agencies, processes, materials, and methods of procedure as have thus far proved efficacious in preventing the onset of disease, in removing all removable conditions on which physical impairment depends, and in overcoming impediments to normal functional activity, thereby "curing" or greatly ameliorating many forms of disease that, heretofore considered incurable, are now known to be amenable to a judicious application of methods, influences, and resources which until recently were either unknown or unappreciated.

2. The inculcation and wider dissemination of *sanatory*, as well as *sanitary* science, in accordance with the most advanced light at present available on these vitally important subjects, through modern biologic, physiologic, and chemic researches and demonstrations.

To inaugurate this movement in an efficient, thorough, and practical manner will require a restatement and revival of the now almost obsolete Art of Living, and the adoption of a new system of sanatory education, fundamental in character, based on natural laws and the revelations of modern science, and calculated to develop, complement, and harmonize this complex embodiment we call human nature, considered in all its aspects—physical, mental, social, psychic, and moral.

True, this work promises most for the generations to come, but it must have its inception with those who are now on the stage and championing the cause of vital science. For present-day benefits we must look to a new departure in the utilization of prophylactic and remedial agencies, which requires a radical innovation in the methods of founding, equipping, and administering sanatoria and every kind of resort for invalids.

If there be one hygienic law better established

than another it is that zymosis, contagion, and infection are the direct means of originating and disseminating many, if not all, of the widely prevailing and frightfully fatal chronic diseases, a majority of which have not hitherto been classed as either infectious or contagious. Hence, any system of treatment that does not fully and practically recognize this law must necessarily fall short of the high degree of success now known to be possible through a careful observance of the simple but imperative laws of asepsis, antisepsis, and isolation.

There can be no question but that a large number of cases, especially of tuberculous disease, which have been greatly benefited or virtually cured by a prompt resort to a propitious climate and judicious treatment, have subsequently suffered fatal relapse through being exposed to reinfection by the dried and pulverized uncared-for discharges from other cases.

Hence, if we make any pretensions to scientific consistency, we must unhesitatingly condemn and discard the prevailing practice of congregating invalids of any class whatever in crowded and no matter how "palatial" hotel-hospitals, whether they be well or illy located as to climate, natural auxiliaries, or scenic beauty. Instead of single, immense, and imposing structures, with "capacity for a thousand guests" (and countless ghosts, recruited annually from the ranks of former guests), in which large numbers of the miscellaneously afflicted are intermittently massed and brought into more or less constant and intimate contact, our invalids must be provided with *detached dwellings*, dissociated cottages, and private villas, according to their tastes and means, all to be constructed, adapted, and furnished with strict regard to the laws of asepsis and the needs and comfort of patients. This is a consummation imperatively demanded by the present attitude of sanitary science, and by accepted results of all the more recent studies and demonstrations in biology, physiology, and pathology. In no other way can the stringent and indispensable rules of prophylaxis, anti-contagion, and anti-infection be even approximately observed or enforced. In no other way can a health-seeking community or series of communities be so organized that immunity from contagion and infection—disease-transference—can be made a primary, paramount, and practical consideration.

Having solved the question of environment and habitation, it then devolves upon us to accord a more adequate and comprehensive recognition to the yet imperfectly explored realm of the *remedii naturæ*. Every effort of Nature is aimed in one of three directions—building, repair, or reproduction. As physicians it is our principal office not to antagonize, but to direct and regulate these efforts. A judicious invocation of the almost limitless resources of Nature has therefore come to be held in such high esteem by advanced minds in the profession that it must hereafter be made a pronounced and prominent feature of every curative effort. Its range is virtually exhaustless and illimitable, yet a rational comprehension of its possibilities is being steadily developed. Its trio of controlling divinities, the three prime functions of all animal life, are *aëration*, *nutrition* and *excretion*.

Aëration, as the results of half a century of physico-chemic experimentation have taught us, involves much more than the indifferently performed and greatly underrated act of respiration, important as is that commonplace function to the instant life and vital continunace of every animal organism. It is intimately involved in the relations of climate, local environment, habitation, exercise, clothing, and a thousand other modifying items and influences not usually coupled with it.

Nutrition includes everything in any way related to the vital commissariat—the building of the body, dietetics, the selection, composition, and preparation of food, and the accurate adaptation of food-elements to the wants of the organism, in health and in disease. The combined results of laboratory and clinical research and experimentation are fast making it possible to so direct and regulate the digestive and assimilative functions as to radically influence and control the activities of the entire organism, to the end that what has manifested itself as diseased action can be gradually changed into normal or healthy action; and as a consequence, the malady, whatever it may have been called, is overcome in the most thorough, rational, and lasting manner, without the delusive aid of palliatives, which merely obtund sensibilities and mask symptoms the cause of which they do not remove.

So, too, *excretion* embraces all the processes by which the system frees itself from waste products which, if retained, become virulent poisons and finally destroy the organism itself. If the emunctories are sluggish or overloaded, the deadly ptomaïns and other products of organic decay accumulate. As long as elimination keeps pace with

organic disintegration health is possible. When the equilibrium normally existing between these two processes is disturbed, disease is the result, and it becomes only a matter of time when organic dissolution will supervene. Hence, a majority of remedial measures that may be properly called curative are directed toward the acceleration of excretory processes, due regard being had for an adequate supply of proper material for replenishment and renewal.

Nor is it extravagant to assert that these three functions, considered in all their remotest bearings and relations, comprehend all that can be attempted toward the relief of those who are physically afflicted.

But it is not enough to heal the sick. Regained health is an inestimable boon for which suffering mortals stand ready to sacrifice everything at their command; but it loses half its value if its possessor does not learn how to retain it after it has been recovered. For this reason no health-institution is either complete or consistent that does not make adequate provision for the dissemination of sound and practical sanatory knowledge. It may be charged that the inculcation of such knowledge will trespass on the domain of the routine practitioner; but the present happiness and future advancement of the race are objects of paramount importance to the personal and pecuniary interests of any one class, interest, or profession. Besides, it is already conceded that the physician of the future will be a conservator of health, not a curer of disease, his art having far more to do with prophylaxis than with treatment. *The day cannot now be far distant when the existence of preventable disease will be considered a public or private crime, and when medical men will be required to study and remove causes, instead of tinkering and philosophizing over their inevitable effects.*

In comparison with the number born, how few live on to even the reasonably ripe age of threescore and ten. Judging by analogy from the known laws of biology and physiology, there is no valid reason why the average human being should not live in comfort and physical enjoyment, retaining all his faculties and functions, to the rounded term of a century; whereas, but a minority can recall a dozen strictly healthy weeks since the trying days of chicken-pox and measles. Many of us are practically toothless at twenty, bare-pated at thirty, and superannuated at fifty.

REFORMS IN COLLEGE ATHLETICS.

In The News of November 18, 1893, we ventured to call attention to the excesses permitted in the name of foot-ball by our colleges, and the consequent injury to true athleticism, to genuine educational interests, and to general social morality thereby. At the time of the appearance of our protest there was not only no considerable opposition to the game, but all important newspapers and college authorities were enthusiastically encouraging the fatal tendency. College professors and presidents were hurrahing themselves hoarse and contributing their house-doors and wood-piles for bonfires to celebrate foot-ball victories.

Following upon our word of warning the editor of The News had a *mauvais quart d'heure.* Friends warned of the danger of taking the unpopular side, and of the wisdom of obedience to the Zeitgeist. One college president wrote a personal letter that we had certainly exaggerated, and that our conclusion was not that of those who had dispassionately studied the game. A few newspapers coarsely abused, and all opponents agreed that we did not know anything of the game. We unflinchingly persisted in our contention, clinching the argument with indubitable facts—and very soon another public sentiment began to manifest itself. One powerful newspaper after another began to speak out boldly against the excesses of foot-ball and of intercollegiate contests, one great journal most flatly and completely changing its entire attitude in twenty-four hours. Despite the casuistic defences and lectures in great magazines and in Christian pulpits by learned professors and eminent divines, it was soon found that there was more sanity in the people than in at least *some* of the educational leaders. The Zeitgeist had changed its mind! Almost without exception the newspapers of the whole country were soon found upon the right side. Then began to appear articles by a number of college presidents, showing (at last!) a healthy courage and a conservative common sense. There followed the strong, manly protest of the University of Virginia, of other colleges, and college-associations. Now, like a thunderbolt, comes President Eliot's authoritative pronunciamento, in which every point contended for by The News is abundantly supported by one whose qualifications and interests are altogether beyond dispute. The University of Pennsylvania has promulgated a set of rules looking to reform of a determined character,

but still not sufficiently thoroughgoing. The Secretary of War and the Secretary of the Navy have forbidden future foot-ball contests between the cadets at West Point and Annapolis, "because such matches are detrimental to discipline and to the studies of the cadets." The victory may, therefore, be considered complete.

The victory, at least, so far as logic and expert authoritative opinion is concerned. But it must not be forgotten that the athletic associations and players are proceeding to their forced tasks, of remodelling the rules and subordinating college athletics to college duties, very much as a whipped schoolboy returns to his lessons. By open "interviews," by corporate action, or rather corporate silence, and by ill-concealed disgust, it is painfully apparent that the task is to them most nauseating. We beg them to take the matter seriously. There is no possible answer except assent, and loyal willing assent, to the fact that, as recently carried on, intercollegiate athletics do abuse, and do not educate, either the human body or the human mind, and that they are not for, but are against true education and social well-being. A game that in two countries, within two or three years, kills outright about a hundred players, and seriously injures a thousand or more, is not, in any sane or etymologic sense of the word, athletic. The element of danger necessary in healthy sport is not, of course, to be entirely eliminated, but when that element becomes the chief element, then it is high time to stop. The noteworthy statistics kindly supplied by Dr. Keen in another column should definitively settle the nonsensical claim that football is not excessively dangerous, and not more dangerous than other sports. The pity is that such an argument was needed—the facts being so patent to all. The men that founded and endowed our colleges, the glorious old Puritans, were not anemic namby-pambies or muscleless lack-adaisicals, and in shunting education into modern "athletic" excesses certain of their modern representatives are false to the trusts imposed upon them. The growth of college-rowdyism is demonstrably due to these excesses, instead, as claimed, of "athletics" being an outlet and safety-valve of youthful animal spirits. The reception of a prize-fighter by Harvard students, and by a tremendous audience at the N. Y. Madison Square Garden last week, when a prolonged series of boxing contests (held for charity's sake!) delighted upper-tendom, are startling facts that display their own lessons to those capable of appreciating them. The point we wish to emphasize is that the better part of the public is coming to recognize the true status of affairs, and that prudence would suggest to the disgruntled revisers of the rules a revision that does in reality revise, and that, in order to preserve what is good in athletic games, they must make a thoroughgoing reform, and altogether excise what is altogether bad.

EDITORIAL COMMENTS.

To Remove Certain Disabilities of the late Acting Assistant Surgeons, U. S. A.—A bill has been introduced into both houses of Congress having in view the commissioning by the President as acting assistant surgeons of the United States Army such private physicians as were employed as medical officers in the armies of the United States for a period of not less than three months and who were officially known as acting assistant surgeons of the United States Army, and whose services were honorably terminated; the date of employment as acting assistant surgeon to be the date of commission and muster into service, and the date of the honorable termination of service as acting assistant surgeon to be the date of discharge or muster out of service. It is not intended that any pay or allowance should be made by virtue of this act, or that the rank, pay, or emoluments of commissioned medical officers of the United States Army should in any way be affected. Such acting assistant surgeons as were disabled by reason of disease contracted or injury received in the military service are already entitled to pensions, under a law which assimilates them to the rank of first lieutenant of the military or marine corps. The object of the present bill is intended to remove a disability by reason of which, as non-commissioned officers, such acting assistant surgeons are denied admission to military organizations like the Loyal Legion and the Grand Army of the Republic. We see no objection against, but only good reasons in favor of the passage of this bill, which would confer official recognition upon a body of men whose services on the field entitle them to the warmest commendation and consideration. The bill has been read twice in the Senate and referred to the Committee on Military Affairs. It has also been introduced into the House of Representatives, referred to the Committee on Military Affairs, and ordered to be printed. It is requested that those who have been acting assistant surgeons, or are in sympathy with this movement, should communicate promptly with members of Congress and others who are in a position to give material assistance.

Overcrowding in the Medical Profession.—From figures given by the Berlin correspondent of the *Medical Press and Circular*, No. 2856, p. 115, it would appear that the relative and absolute number of medical men in Germany is increasing at a rate not behind that which has become a cause for concern in the United States. It can only be conceived that there must still be something exceedingly attractive about the study and the practice

of medicine that will take young men and women away from more lucrative pursuits to enter upon a life that is known to demand close application and hard work, without corresponding pecuniary remuneration. We must hope that this large increase in numbers will bring with it constant improvement in quality, professional and ethical. We fear, however, that the number of failures will be greater, but the successes will have to be won by real ability. The number of medical men in Germany at the close of the year 1892 was 20,500, whilst a year later it had increased to 21,621—a difference of 5.46 per cent. At the close of the year 1892 there were in Berlin 1636, and at the close of the year 1893, 1799 physicians—an increase of 10 per cent. During five years the increase has been 22.2 per cent. Throughout Prussia there are 12,851 medical men, an increase of 777 over the year 1892; in Bavaria there are 2431, an increase of 86; in Saxony 1563, an increase of 40; in Baden 855, an increase of 44; in Wurtemberg 739, an increase of 28; in Elsass-Lothringen 632, an increase of 33; in Hamburg 429, an increase of 8. The proportion of physicians to the population is 4.37 to 10,000, against 4.15 in 1892. In Hamburg the proportion is 6.98; in Bremen, 6.92, and in Lubeck, 6.11. Throughout Prussia the proportion is 4 28. The proportion is highest in the towns in which there are universities: In Strassburg, 17.8; in Halle, 12.1; in Munich, 11.9; in Berlin, 11.5; in Breslau, 11.3; in Königsberg, 10.6.

Subscriptions Free, the Advertisers Paying the Bills.—We have before us a medical journal that prints on its title-page, "Sent free to every member of the profession in —— ——." This has the decided merit of frankness. We have long been used to the method of exploitation in lay periodicals, consisting of giving a tremendous amount of so-called reading-matter at less than the cost of the printer's bill, but making fortunes by the advertisements secured through the large circulation. In a business sense this would seem to indicate that the price of advertisements or of subscriptions should be lowered. This "medical" journal has chosen to lower the subscription—and to zero! When such a method enters medicine as it has done—frankly in the case cited, secretly in many so-called medical journals—it is a cause for criticism. The good of the profession demands that every journal it supports, and every line of the reading-matter shall be written and published in the interests of medical science and ethics. There is only a certain amount of money that advertisers can afford to pay for advertising reputable and worthy things, because there is only a certain maximum sale for and profit in such things. It is the disreputable and worthless product that pays the big advertising bills. How can a reputable journal, published with true professional ideals, compete with journals published by the advertisers and solely in their interests? How can reputable physicians edit such journals? How can they write for them? How can they allow them to be delivered to their address?

A Singular Oversight.—In a paper occupying six entire pages of the *Journal of the American Medical Association* for February 10, 1894, Dr. J. E. Woodbridge refers to a large number of cases of typhoid fever, in which he brought about almost miraculous cures by a "special" mode of treatment, which is merely hinted at. The only explanation that can be found for withholding the important information that might have made the paper a life-saving one is contained in the expressed fear of giving "to the world a treatment that on more thorough trial might prove to be a failure in the hands of more able but less enthusiastic practitioners, and the action of which I could not then and cannot now explain." Having thus plucked up courage to detail the results of this "special treatment," we earnestly hope that Dr. Woodbridge will hasten to give to the world the details of the method that in his hands has proved so incomparably successful. As the matter stands, we are at a loss to see how the editor of the *Journal* could give up so much valuable space to a paper that tells so little of value. Is a new secret nostrum to be fathered by and foisted upon the profession? If not, why not divulge its nature and method at once? The whole affair looks decidedly quackish.

The Pharmacy Act Declared Unconstitutional.—It is reported that a physician in the western part of Pennsylvania has been acquitted of a charge of violating the pharmacy law by compounding medicines without being a registered pharmacist. The prosecutor was the President of the State Pharmaceutical Board. The judge who delivered the opinion in the case is quoted as saying that the bill was framed in the interest of druggists and that it was unconstitutional.

REVIEWS.

A Treatise on Hygiene and Public Health. Edited by Thomas Stevenson, M.D., F.R.C.P. Lond., Lecturer on Chemistry and on Medical Jurisprudence at Guy's Hospital; Official Analyst to the Home Office; and Shirley F. Murphy, President of the Incorporated Society of Medical Officers of Health; Medical Officer of Health of the Administrative County of London. In three volumes. Volume II. 8vo, pp. 847. Philadelphia: P. Blakiston, Son & Co., 1893.

The second volume of this *Treatise on Hygiene and Public Health* contains a group of valuable and interesting monographs. It opens with an extensive article upon the "Pathology and Etiology of Infectious Diseases," by E. Klein, M.D., F.R.S. The subject is treated under the following sections: Section A includes general considerations of bacteria—morphologic, biologic, and technical; Section B, the specific or pathogenic bacteria, and Section C the specific diseases. The article closes with a very large group of illustrations made from photographs and colored sketches. They are, in the main, not especially good, and convey but little idea of that for which they were designed. This is particularly true of the colored plates giving the macroscopic appearances of growing cultures. The text is a fair presentation of the subject, though conspicuously biased in many points by the individual views of the author, which have not met with general acceptation outside of England. Considerable space is devoted to the so-called milk epidemics of scarlatina, and

among others the statement appears: "These milk epidemics are nowadays so easily recognized . . . that there is hardly a health-officer in this country (England[1]) who has not had the opportunity . . . to himself investigate or become acquainted with such an epidemic." It appears to us singular that these outbreaks of scarlet fever due to milk should appear so frequently in England and escape observation in other countries. The chapter on the pathology and etiology of diphtheria is remarkable for the entire absence of any mention of the peculiar cell-necrosis described by Oertel in the tissues of the human subject dead of this disease, and by Welch and Flexner in animals that have succumbed to the experimental form of diphtheria. The comments upon the cultural peculiarities of the bacillus diphtheriæ of Loeffler leave but little room for doubt that part, at least, of Klein's work on this subject has been done with organisms other than the genuine bacillus diphtheriæ, and which have been mistaken for it. There are many details to which the specialist might take exception, but these do not diminish the value of the article for the general reader.

The monograph upon "The Natural History of Infectious Diseases," by T. W. Thompson, opens with some generalizations upon the history and causes of diseases. As each disease is considered it is treated under the following heads: Synonyms (Eng., Fr., Ger.); history and geographic distribution; periodicity; influence of climate and of seasons; mortality; fatality; influence of race, sex, age; modes of dissemination; period of incubation; and protection. It will be seen from these headings that the article contains much valuable and instructive matter.

"Smallpox and Vaccination," by John C. McVail, M.D., F.R.S.E., contains a history of the disease; its distribution; periodicity; fatality; cause and mode of dissemination; protection. Among other things, the article contains numerous charts that represent graphically the relative frequency of the disease in various localities, and in large groups of vaccinated and unvaccinated individuals.

The balance of the volume is given to articles on vital statistics; marine hygiene; military hygiene; disposal of the dead; and the medical officer of health. As a whole the volume is creditable alike to authors, editors, and publishers.

A Text-book of Physiology. By M. Foster, M.D., LL.D., F.R.S., Professor of Physiology in the University of Cambridge, and Fellow of Trinity College, Cambridge. With illustrations. Sixth edition. Part I, comprising Book I: Blood. The Tissues of Movement. The Vascular Mechanism. New York and London: MacMillan & Co., 1893.

No more conclusive proof can be offered of the continued interest and activity in the investigation of physiologic processes than the appearance of numerous manuals, compends, and text-books, and the necessity for new and revised editions of those that have already found favor with students and physicians. It is a recognition of the truth that not only histology, but also physiology, or a complete knowledge of the physico-chemic processes that underlie all normal vital phenomena, constitutes the essential basis for a correct interpretation of pathologic and clinical phenomena.

Among the many books that have been published within the last ten years none has met all the requirements so satisfactorily and attained so wide an acceptance as the text-book of Prof. Michael Foster. Originally published as a single volume of small dimensions, it has grown with the advance of physiologic knowledge, until it now presents itself in five complete parts, aggregating nearly two thousand pages. It is not difficult to account for the popularity of this work in both England and America. The clearness of conception and the judicial presentation of physiologic problems are unsurpassed, and make the work a readable and instructive one for both advanced students and practitioners. Without overburdening the text with descriptions of apparatus or unnecessary anatomic details, the central idea of each subject is elucidated and illustrated by appropriate histologic facts and brief statements of the principles involved in any given physiologic method.

Of this sixth edition several parts have already been published. The original appendix on "The Chemical Basis of the Animal Body," written by A. Sheridan Lea, appeared in an enlarged and revised form as a separate but complementary part about a year ago. Part IV, comprising an account of the physiology of the special senses, was also published last winter. This section of the work was very much enlarged over that of the previous editions. Part I, which has just been issued, comprises the blood, the tissues of movement, and the vascular apparatus, and is practically a reprint of the fifth edition, with the exception of some thirty pages of additional matter pertaining to the cardiac beat. The author here revises the former account of the beat, and incorporates, with customary clearness, the results of the investigations of Hürthle, Frey and Krehl, and others, as to the characters of the endocardial pressure and its relation to the aortic pressure, and the bearing which both have on the pulse-wave and its interpretations.

The succeeding part of this valuable work will no doubt bear the impress of the author's wide and accurate knowledge of the subject.

Essentials of Minor Surgery, Bandaging, and Venereal Diseases. By Edward Martin, A.M., M.D. Second edition, revised and enlarged. 78 illustrations. (Saunders' Question-Compends, No. 12.) Philadelphia: W. B. Saunders, 1893.

In preparing the second edition of this little book the author has revised it thoroughly so as to bring it, as he says in his preface, "up to the present standard of surgical practice." The section on the roller bandage is improved by the excellent illustrations and descriptions borrowed from the *American Text-book of Surgery*. These cuts are admirably executed and clearly portray the various bandages they serve to illustrate, and will doubtless be appreciated by students, for whose use the book is intended.

In the 166 pages which comprise this volume the author has succeeded in getting over his ground, in question and answer style, as well as could be expected. The answers to the questions, while clearly expressed, and therefore easily fixed in the student's memory,

[1] Parenthesis ours.

sometimes tend to be superficial, a fault which, however, in a book like this it is not easy to avoid.

Transactions of the State Medical Society of Wisconsin for the Year 1893. Vol. XXVII. Madison, Wis.: Tracy, Gibbs & Co., 1893.

The quality of the papers contained in this volume is for the most part good, and gives evidence of the high standard of the scientific proceedings of the meetings at which they were read. Contributions of notable excellence are: that by Levings on the "Present Status of Surgery," in which he admirably exposes the advances of modern surgery; a paper by Reineking on the "Surgery of the Trifacial Nerve"; "Intestinal Anastomosis," by Ladd; "Pleural Effusions: their Diagnosis and Treatment," by Batchelor; "Renal Neoplasms, with Report of Two Cases of Nephrectomy," by Mackie; Copeland's paper on "Drainage after Operations on the Pelvic Organs"; Hamilton's on "Tumors of the Bladder"; and Würdemann's on "The Treatment of Chronic Suppuration of the Middle Ear by Removal of Carious Ossicles, Necrosed Bone, and other Obstructions in the Tympanum."

The book has a neat appearance, and the typography is excellent.

CORRESPONDENCE.

LETTER FROM LONDON.

[From Our Special Correspondent.]

Who Shall Treat Diseases of the Digestive Tract?—The Treatment of Influenza, of Diphtheria, and of Rectal Disease—Scurvy in Children—Brunton on Headaches—The Allyl or Garlic Treatment of Tuberculosis.

"Surgery," it has been said, "is superficial medicine." To which, by way of retort, it has been added that medicine is surgery in the dark. Mr. C. H. Watts Parkinson, an eminent local practitioner in the Southwest of England, and President of the Bournemouth Medical Society, in one of those homely and unscientific addresses which often contain many grains of cultivated experience and sound common sense, observed that the treatment of inflammation of the bowels—or typhlitis, perityphlitis, and appendicitis—seemed now to be passing from the physician to the surgeon. In these days of antiseptic surgery it is dangerous to take a case of gastric disease to a surgeon for fear he will want to explore the interior, and it seems that every case of inflammation in the right flank is due, or ought to be due, to that wretched mistake of Nature—the appendix ceci. But, after all, are these cases so dangerous, as a rule, that they need an operation? How common they are, and how few are serious! The only fatal case he had seen was in consultation, in which the medical man had been treating with a course of white mixture. And here he recommended the method of examining the liver and abdomen suggested recently by Mr. Arbuthnot Lane, of Guy's, in the *British Medical Journal*, viz., making the patient sit astride on a chair, with the body well bent forward and the arms hanging over the chair, the surgeon standing behind and passing his arms round the body.

Of course, he had something to say about the treatment of influenza. His contribution was as follows: "As a general routine treatment, I believe in salicylate of soda, to which I always add a little nux vomica, milk-diet, with a little whiskey and milk when the crisis has set in and perspiration is profuse, and plenty of blankets. I have had to make the *experimentum in corpore vili* three or four times, and whereas before I took the salicylates I was laid up a week or more, the last two attacks, apparently equally severe (temperature from 102° to 103°), only kept me from work forty-eight hours. I think the addition of the nux vomica most useful in counteracting the depressing influence of the disease and the salicylates."

For diphtheria he recommends the trial of an old remedy, viz., chlorin in solution. "I have used it now some years for diphtheria and sore-throats, and have not had a death. Last year a woman and four children were attacked in one house; two children first attacked were dead before medicine could reach them; the others did very well, and recovered without any sequelæ." He uses potass. chlor. gr. 40, acid. hydrochlor. fort. ℥ 40. Put the powder in a dry bottle, add the acid, cork, and shake well; when chlorin is evolved, add water gradually to eight ounces, shake, and add glycerin. In scarlet fever he recommends the treatment by perchlorid of mercury and biniodid (as recommended by Dr. Illingworth), added to inunctions of eucalyptus oil (recommended by Dr. Curgenven), or some other antiseptic; this treatment is, in his opinion, the best and most likely to modify the disease and also the period of infectivity.

Dr. Clifford Allbutt, although Regius Professor of Medicine in Cambridge University, has not forgotten his Leeds experiences, according to which a large number of cases of irritation of the rectum, associated or not with hemorrhoids or fissure of the anus, are cured often at once by dilatation of the sphincter ani. What he advocates is not a mere passing of large bougies, but the introduction of the two thumbs of the surgeon into the orifice, under an anesthetic, of course, and the forcible separation of them until the muscle is felt to creak and give way under the strain. The degree of stretching so produced is no small one, and in the case of a toughened adult sphincter, may require something like the full strength of the operator. If any incontinence follow, it never lasts more than a day or two. The *rationale* of the condition which this operation so markedly relieves is probably that, as a result of irritation, a spasm of the muscle is set up, which may persist after its cause has passed away, and may even lead to hypertrophy and degeneration of the muscle into a hard, comparatively-rigid fibrous ring. Dr. Allbutt also states that many cases of obstinate constipation, especially among women, are relieved by forcible bimanual dilatation of the sphincter ani.

Dr. Sutherland draws attention to the occurrence of scurvy among children. It is a food-disorder, being always associated with a deficient supply of sound fresh animal or vegetable products, and in many cases with the employment of a diet quite unsuited to an infant's digestive powers, and he says there is no doubt that the increase of scurvy among children during the last fifteen years is largely due to the recent extensive substitution of proprietary infants' foods for cows' milk or breast-milk and natural vegetable products. Probably

it would be still more common but for the fact that children so often get potatoes and fruit and that the antidote is thus supplied. The great mass of cases occur between the seventh and the twenty-fourth month. In most cases the disorder is associated with rickets, with the common signs of which its own symptoms are a good deal intermingled. There is an exaggeration of the listlessness and dislike to being moved, which is so common in that disease, but when subperiosteal effusion takes place there is intense pain in one or more limbs with complete loss of power in them. The thigh is the most commonly affected in this way, and the skin becomes tense and glistening, but not inflamed. The gums round such teeth as have been cut are swollen and tend to bleed, but are often merely pale in other parts. There is edema of one or both eyelids, or about the ankles, and there are often subcutaneous hemorrhages. The treatment is fresh milk, fresh fruit, and fresh vegetables. In small infants the juice of fruit, such as oranges, grapes, etc., may be squeezed into the milk. Sunlight and fresh air are useful, but the child must be kept in bed till the breathlessness due to the anemia is past.

Dr. Lauder Brunton, speaking of nervous, or so-called bilious headaches, draws attention to the importance of such a remedy as is required being taken early before the headache has completely taken possession; when a headache has once fully developed, absorption by the stomach is so completely checked that nothing but the hypodermatic injection of morphin does much good. This probably is the cause of the variability observable in the action of such remedies as antipyrin. In many cases, however, headaches give a warning of their coming, and then a dose of thirty grains of potassium bromid with from five to fifteen grains of sodium salicylate will often prevent their further progress. This warning is often a little irritability in the evening; in this case the dose should be taken then; and if, on awaking in the early morning, there should be the feeling of weight in the head which is the precursor of the undeveloped attack, the dose should be repeated or taken for the first time if that is the first indication; and a third dose may be taken in the morning. The great thing is to trust to the warning and get in the medicine before the attack develops. Dr. Brunton, however, emphasizes very strongly the great frequency of the causal relation of ocular defects of accommodation with nervous headache, between 80 and 90 per cent. being due to visual defects, about 10 per cent. to decayed teeth, and about 5 per cent. to disorders of the nose, throat, and other causes.

The continually advancing experience of the value of hygienic treatment of tuberculosis does not hinder men from seeking for some medicinal means of checking the development of the tubercle-bacillus within the body. For the last suggestion we are indebted to Dr. Vivian Poore, who has come to the conclusion that garlic not only ought to be, but is, curative in pulmonary tuberculosis. Inhalations of many substances have been tried, but it is very doubtful how far they are beneficial, except in alleviating cough; for not only is the vapor which can be inhaled very dilute, but the bacilli to be attacked lie within the tissues rather than on the surface. If an antiseptic is to do good it should be something which is absorbed by the stomach, mingles with the blood-stream, and is eliminated by the lungs. The allyl compounds, such as allylic alcohol and oil of mustard, have been shown by Koch to be strongly antiseptic. It is well known that onions and garlic contain the active principle "allyl," which is largely excreted by the breath; and it seems not unreasonable to believe that a body such as garlic, which even in small quantities persistently taints the breath, might have some utility in pulmonary tuberculosis. Dr. Poore has found garlic of distinct service in cases of dilated bronchi with fetid expectoration, and although some people might say that esthetically there was but a change of smells, the point is that the fetor of decomposition disappears, showing that a distinct effect had been produced. But cases of undoubted tuberculosis have also been treated with garlic, with markedly beneficial results, one case of laryngeal tuberculosis in which the characteristic swelling was very obvious, showing a complete retrogression of the physical signs. Usually the garlic was given in the food, a "clove of garlic" being chopped up and boiled with the beef-tea, but it also can be administered as an extract enclosed in gelatin capsules.

FOOT-BALL AT WEST POINT.

To the Editor of THE MEDICAL NEWS,

SIR: At your request, I very gladly give you the facts which I stated on Tuesday night during the debate on foot-ball at the Contemporary Club. So far as I know, this is the first contribution giving an accurate comparative statement of the injuries from foot-ball, riding, and in the gymnasium, among the same class of men, with an analysis giving the percentages.

It is very evident that the actual number of accidents from riding, shooting, drowning, etc., is no guide as to the relative danger of these sports, unless we also know the actual number of persons engaged in each, and from these facts can deduce the percentages of danger.

With the kind consent of Surgeon-General Sternberg, of the U. S. Army, I addressed a letter to Major P. F. Harvey, the Post-Surgeon at West Point, and received from him the subjoined table, giving the list of casualties and the number of men, the number of accidents, and the number of days lost. I should add that the percentages under each of the tables are additions of my own:

LIST OF CASUALTIES AMONG U. S. CADETS FROM SEPT. 1, 1893, TO NOV. 30, 1893, DUE TO FOOT-BALL AND INSTRUCTION IN RIDING AND GYMNASTICS.

Foot-ball.				Riding.	Gymnasium.	
Sprains.		Contusions and lacerations.	Fracture both bones of leg.	Injuries of all kinds.	Injuries of all kinds.	Remarks
Severe.	Slight.					
4	32	17	1	17	9	Injuries in riding and gymnasium usually very slight.

I. *Number of Men.*

Number of Foot-ball players (approximate)	34
" under instruction in Riding Hall	184
" " " " Gymnasium	106

II. *Number of Accidents.*

Foot-ball	54
Riding	17
Gymnasium	9
Total	80

Percentage: 54/34 = 1.6 per man in foot-ball.
17/184 = 0.09 " " in riding.
9/106 = 0.08 " " in gymnasium.

III. *Days Lost.*

From foot-ball accidents	277
" injuries in riding	57[1]
" " " gymnasium	11

A. Percentage of days lost per man engaged in playing:
277/34 = 8.01 days in foot-ball.
57/184 = 0.31 " in riding.
11/106 = 0.15 " in gymnasium.

B. Percentage of men off duty per diem:
277/90 = 3.01 men in foot-ball.
57/90 = 0.63 " in riding.
11/90 = 0.12 " in gymnasium.

C. Percentage of days lost per accident:
277/54 = 5.01 days in foot-ball.
57/17 = 3.04 " in riding.
11/9 = 1.02 " in gymnasium.

1. *Percentage of accidents.* From the table the following deductions may be made: First, the *percentage of accidents per man* playing in the place, and for the season to which this table refers, was *twenty times as frequent in foot-ball* as in riding or in gymnastics (1.6 : : 0.09 : : 0.08, II).

2. The *number of days lost from foot-ball accidents per man playing is twenty-six times as much in foot-ball* as compared with riding, and *over fifty times* as much as from gymnastics (8.01 : : 0.31 : : 0.15, III A).

3. The *number of days lost per man injured* is 5.01, 3.04, and 1.02 (III C), showing that the foot-ball accidents in the table were nearly *twice* as serious as those from riding, and *five times* as serious as those from gymnastics.

4. *Number of men continuously off duty.* There were *five times* as many men off duty per diem from foot-ball accidents as from riding accidents, and *twenty-five times* as many as from gymnastics (3.01 : : 0.63 : : 0.12, III B). It must be remembered, also, as Dr. Harvey says in his letter, that "in addition to the cases enumerated, there were, of course, others which were either very slight or temporary, or failed to come under observation on account of pride," etc. This, however, is an observation which would probably apply equally well to any of the other accidents. It may be added also that the relative proportion between foot-ball and riding accidents is much more unfavorable to foot-ball, from the fact that twenty-seven days of the whole fifty-seven lost in riding were due to a single case, leaving therefore thirty days to be divided among the other sixteen accidents from riding. And when one considers the "dare-devil" character of the riding at West Point, it seems to me that the liability to accident would be perhaps greater there than among those who ride more quietly. On the other hand, however, we must remember that the West-Point riders are among the best trained and most competent in the country, and hence accidents would be comparatively few, perhaps less than among the general public.

It may be objected that any inferences drawn from one period of only three months might well be erroneous. I do not know whether records are kept at West Point of the casualties of several years past, but I have written to inquire. Certain it is that any disproportion within the limits of a normal law of variation cannot be said, it seems to me, to account for the fact that the accidents in foot-ball, both in number and in character, as compared with those from riding and gymnastics, were so much more frequent and serious.

My own opinion, as a surgeon who has seen a large number of accidents, is that foot-ball, *as played at present*, is a needlessly dangerous sport. The price paid for the good it does is too high, both in life and limb. Strip it of its needless dangers, and no one would be a more hearty advocate of the game than I. This revision of the rules to eliminate its dangers must be made by foot-ball men themselves. If they do this the game will hold its present place in the esteem of all who value manly and invigorating sport. If they do not, then it should be prohibited, at least in our colleges where the faculties have the power to do so. Prohibit it there, and it will be doomed to an "innocuous desuetude."

Very respectfully yours,

W. W. Keen.

1729 Chestnut Street, Philadelphia, February 15, 1894.

[1] 27 days of this, in one case, due to kick of horse on shin, causing periostitis.

AN HISTORIC CASE.[1]

A Case of Extra-uterine Fetus, described by Mr. John Bard, Surgeon at New York, in a Letter, dated 1759, to Dr. John Fothergill.

Mrs. S., the wife of a mason, about twenty-eight years of age, having had one child without any uncommon symptoms, either during her pregnancy or labor, became, as she imagined, a second time pregnant. She was more disordered in this than in her former pregnancy, frequently feverish, the swelling of her belly not so equal, nor the motion of the child so strong and lively. At the end of nine months, when she expected her delivery, she had some labor pains, but without a flow of waters or any other discharge. The pains soon went off and the swelling of her belly grew gradually less; but there still remained a large, hard, indolent, movable tumor, inclining a little to the right side. She had a return of her menses, continued regular five months, conceived again, and enjoyed better health; the swelling of her belly became more equal and uniform, and, at the end of nine months, after a short and easy labor, she was delivered of a healthy child. The tumor on the side had again the same appearance as before her last pregnancy. Five days after delivery she was seized with a violent fever, a purging, suppression of the *lochia*, pain in the tumor, and profuse fetid sweats. By careful treatment

[1] This communication was read in London on March 21, 1760, and has been kindly furnished by Dr. F. G. Devereux, of Kezar Falls, Maine. The transcription was made from an old medical volume published in London in 1762, and was suggested by the Address of Dr. McMurtry, published in The Medical News of February 17, 1894.

these threatening symptoms were in some measure removed; but there still remained a loss of appetite, slow hectic fever, night-sweats, and a diarrhea. To the tumor, which continued painful and gradually increased, were applied fomentations and emollient poultices; and at the end of nine weeks I perceived so evident a fluctuation of matter in it, that I desired Dr. Huck, physician to the army, to visit this patient with me, and be present at the opening of it. From the whole history we concluded that we should find an extra-uterine fetus. I made an opening in the most prominent part of the tumor, about the *middle* of the *right rectus muscle*, beginning as high as the navel and carrying it downward. There issued a vast quantity of extremely fetid matter, together with the third phalanx of a finger of a child. Introducing my finger into the abscess I found an opening into the cavity of the abdomen by the side of the rectus muscle, through which I felt the child's elbow. I then directed my incision obliquely downward to the right ilium, and extracted a fetus of the common size at the ordinary time of delivery. The frontal, parietal, and occipital bones, as also the third phalanges of the fingers of one hand, separated by putrefaction, remained behind; which I also took out. We imagined the placenta and funis umbilicalis were dissolved into pus, of which there was a great quantity. By the use of fomentations and detersive injections, while the discharge was copious, fetid, and offensive, and by the application of proper bandages and dressing with dry lint only, when the pus became laudable, the cavity contracted, filled up, and was cicatrized in ten weeks. The source of the hectic being removed, with the help of the bark, elix. of vitriol, and a proper diet, she quickly recovered good health. Her milk, which had left her from the time she was first seized with the fever, returned in great plenty after the abscess was healed, and she now suckles a healthy infant. I am, Sir, with great respect,

Your most humble servant,

JOHN BARD.

New York, December 25, 1759.

NEWS ITEMS.

The Medical Society of the State of Pennsylvania, at its last meeting, appointed a Committee on Scientific Business, consisting of Drs. Dulles, of Philadelphia; Gorgas, of Harrisburg; LeMoyne, of Pittsburg; Tyson, of Philadelphia; and Towler, of Marienville, "To secure scientific papers, and to provide scientific discussions for each annual meeting, and to coöperate with the Committee of Arrangements and Credentials in arranging the program." The object of this innovation is to have a permanent committee which, becoming familiar with the subject, shall find it easier to secure good scientific work than is possible for a committee that is appointed new every year.

The Committee hopes that each member of the State Society will aid it in attempting to make the meetings of the Society of greater scientific importance than they have been in the past. To this end the Committee will welcome suggestions from any member of the Society, and especially, at this time, offers of contributions to the work of the next meeting, at Gettysburg, from May 15th to 18th. It is desired that there should be as many brief, concise, practical papers as possible, and it is proposed to have a discussion on Tuberculosis, devoting the morning to "Medical Tuberculosis," and the afternoon to "Surgical Tuberculosis."

Any communication from members of the Society in regard to the work of the Committee will be welcomed.

Members of the Society desiring to read papers, or to take part in the discussion on Tuberculosis, will please notify the Chairman of the Committee, Dr. Charles W. Dulles, 4101 Walnut Street, Philadelphia.

The American Medical Association.—Arrangements are in progress providing for a special train of Pullman cars, including dining accommodations, leaving Omaha and Denver during the last week in May, by way of the Union Pacific Railroad, stopping at Salt Lake City, and reaching San Francisco in time for the meeting of the American Medical Association. The return trip may, if desired, be made by steamer via Portland and the Oregon Short Line. An endeavor will be made to have the rates of fare even lower than those specially made for the Mid-winter Fair.

The excursion will be in charge of Dr. George Wilkinson, of Omaha, Secretary of the Nebraska State Medical Society, and editor of the *Omaha Clinic*, who will be glad to receive suggestions or give additional information to those who may desire it.

Eleventh International Medical Congress.—Prof. H. J. Johnston-Lavis, 7 Chiatamone, Naples, desires to inform American attendants upon the Eleventh International Medical Congress that he will be pleased to aid and advise them during during their stay at Naples.

Il Policlinico is the title of a new Italian journal published twice a month, and under the editorial care of Dr. Guido Baccelli and Dr. Francesco Durante.

Books and Pamphlets Received.

Ueber den Einfluss des Quecksilbers auf das papulöse Syphilid. Von Dr. Unna. Sonder-Abdruck aus der Berliner klin. Wochenschrift, 1892.

Mundpflege und Kali Chloricum. Von P. G. Unna. Sonder-Abdruck aus Monatshefte für praktische Dermatologie, 1893.

Entzündung und Chemotaxis. Von P. G. Unna. Sonder-Abdruck aus der Berliner klin. Wochenschrift, 1893.

Die Diaskopie der Hautkrankheiten. Von P. G. Unna. Sonder-Abdruck aus der Berliner klin. Wochenschrift, 1893, No. 42.

The Meaning of Vital Movements. By H. A. McCallum, M.D. Reprinted from the Canadian Practitioner, 1893.

Three Kinds of Favus. By P. G. Unna. Reprinted from the British Journal of Dermatology, No. 43, vol. iv.

A New One-stroke Double-tinction for Lepra and Tubercle Bacilli. By Dr. P. G. Unna. Reprinted from the Sheffield Medical Journal, 1893.

Inflammation and Chemetaxis. By Dr. P. G. Unna. Translated by C. Bernard Wolff, M.D. Reprinted from the St. Louis Medical and Surgical Journal, 1893.

Artificial Opening of Pulmonary Cavities, Insertion of Rubber Tube, and Injection of Chlorine Gas. By E. L. Shurly, M.D. Reprinted from the Journal of the American Medical Association, 1893.

A New Series of Test-words for the Determination of the Power of Accommodation. By Charles A. Oliver, M.D. Reprinted from the Archives of Ophthalmology, 1893.

A New Series of Test-types. By Charles A. Oliver, M.D. Reprinted from the Archives of Ophthalmology, 1893.

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ORIGINAL ARTICLES.

KATATONIA, WITH SIX ILLUSTRATIVE CASES.

BY E. D. BONDURANT, M D.,
ASSISTANT SUPERINTENDENT OF THE ALABAMA INSANE HOSPITAL AT TUSCALOOSA.

IF one sets out to discover from the text-books and neurologic journals whether or not there is such a disease as katatonia, and if so, in what this disease consists, he will probably emerge from the study of the already voluminous literature of the subject in a state of considerable doubt and perplexity, and with a vivid realization of the defects and inaccuracies of the several existing systems of classification of mental disorders. Quoting the definitions of two English writers, we find that katatonia is "characterized by a pathetical emotional state and verbigeration, with a condition of motor tension"; and that it is a "cerebral disease with cyclical symptoms ranging in succession from primary melancholia to mania, stupidity, and dementia, one or more of these stages being occasionally absent [how many of the four stages may be absent and still leave us a katatonia?], whilst convulsive and cataleptoid symptoms [both?] accompany the mental changes."

The published accounts of the disease differ in many particulars, and the reported cases show a wide variation in symptoms; but the more typical cases, we are told, pursue some such course as the following: Beginning as a primary melancholia, usually in a subject exhibiting evidences of the insane constitution, the emotional state soon changes to excitement or exaltation of a peculiar kind, with systematized delusions of a grandiose nature, accompanied by "verbigeration"—*i. e.*, meaningless repetition of words and phrases in a theatric or declamatory manner; or we may have a simple acute mania, or a melancholia agitata; this stage terminates after a longer or shorter time in stupor or apathy, with cataleptoid symptoms, mutism, and not rarely convulsive seizures of some kind; or, the psychic and somatic symptoms may closely resemble those of a melancholia attonita. The disorder terminates in chronic delusional dementia of a paranoiac cast, in rare instances in recovery, or in death, the last occurring with notable frequency from tuberculosis.

It is therefore a species of *folie circulaire* plus catalepsy, or a circular insanity in which one stage is a melancholia attonita. Kahlbaum and his supporters would regard it as a clinical and pathologic entity, having its characteristic symptoms and pathologico-anatomic findings, but the majority of alienists who have expressed themselves upon the subject, while recognizing in the name a convenient designation for a rare and interesting group of symptoms, deny to katatonia the honor of a separate place in their schemes of classification, and look upon the affection as only one of several forms of a pathologically alternating mental state, and distribute the cases of katatonia among the allied and more commonly recognized forms of insanity—hysterical mania, secondary paranoia, circular insanity or melancholia attonita. Clinical study of the insane simply adds to the confusion. The few typical cases, exhibiting the procession of melancholia, mania, stupor with cataleptoid and convulsive states, verbigeration and mutism, present a very striking picture; but when one or more stages are, as is usual, absent, the matter of diagnosis is by no means plain; gradations from katatonia into a half-dozen other forms of insanity can be traced, and all of the symptoms of katatonia, mental as well as physical, have been noted, singly or in combination, in cases of insanity that cannot by any effort be twisted into the katatonic mould.

Kiernan states that two per cent. of the patients in the New York City Asylum at Ward's Island (males) some years ago were the subjects of katatonia. The proportion of such cases among the insane of Alabama, judging from the two thousand five hundred cases treated at the State Insane Hospital during the past eight years, is certainly very much less than this; in fact, only one very typical case (Case I) has been observed; admitting a liberal number of transition-forms, in which "one or more of the stages are absent," at most a dozen instances of the affection among our twenty-five hundred patients have been seen, and almost all of these could with equal justice be included among other varieties of insanity. Our one case exhibiting most of the characteristic mental and physical symptoms of katatonia, with several others illustrating the transition-forms spoken of, is herewith reported:

CASE I was a white woman, of neurotic heredity, a native of Alabama, without education, a laborer's wife. She married at twenty years of age, but had no children; after four years her husband

deserted her, leaving her destitute. Two months later, following a brief period of vague depression and fear, she passed into a state of melancholia, with persecutory delusions, suspicion, and irritability. Eight weeks after the mental disease was recognized she was placed in the insane hospital.

Her condition at that time was as follows: Height, five feet two inches; weight, one hundred and six pounds; hair brown; eyes gray; complexion fair. Circumference of head was 52.7; antero-posterior diameter, 18.7; transverse, 14.3 cm.; the ear-lobes were small and ill-shaped, the lobes rudimentary and completely attached: the teeth were regular, the palate well formed. There was no striking asymmetry of face or skull, but in the latter the lines of suture were prominent; a slight depression was noted in the region of the anterior fontanel, and there was flattening of the occipital region. The body was tolerably well nourished and very muscular. The heart was normal; the lungs normal, save for the presence of a few bronchial râles heard posteriorly, on both sides. The woman had a slight hacking cough, and a temperature of 99.2° The breath was offensive, the tongue coated. Examination of the urine was entirely negative in results. There was no anemia. The patient was confused, incoherent, fretful, cross, and easily irritated; she replied to some questions with fair intelligence, but paid no attention to others. Distinct delusions were not elicited, but her manner indicated dread and suspicion. She stared blankly into vacancy, picked at her clothing or at the walls, or walked aimlessly about. She took her food voluntarily and was not unclean in habits.

During the three months immediately succeeding her admission the psychic features of the case altered but little; the woman remained quiet and indifferent most of the time, but when interfered with would rouse up, curse or scream, and occasionally strike anyone who happened to be standing near. There was a gradual failure in physical health during this time; fever was constant, and the patient lost flesh; she had a cough, with scanty expectoration of muco-purulent matter, in which a single examination failed to detect the bacillus tuberculosis. Physical examination of lungs was also without positive result, although the general symptoms were those of pulmonary tuberculosis in an early stage. At the expiration of about three months some improvement in the physical state was inaugurated; fever and cough disappeared, and the patient gained in weight and grew stronger. The mental symptoms also underwent a change in character, the depression, fits of reverie and abstraction gradually giving place to maniacal excitement; she became noisy, pugnacious, destructive, and very filthy in her habits; her talk was incoherent and usually abusive, but verbigeration was not shown. At long intervals during this period of excitement she would lapse into a state of stupor or reverie for a few moments, but when spoken to, would arouse and begin her noise and restless movement again. This continued for about thirteen months, her bodily condition remaining fair until toward the end of this time, when symptoms of tuberculosis reappeared, accompanied by a kidney-lesion, as shown by alternating diarrhea and constipation, headache, edema of the lower extremities and eyelids, and the constant presence in the urine of a small percentage of albumin, with many hyaline, granular, and nucleated casts, with disintegrating renal cells. As the physical weakness progressed, a change in the mental symptoms occurred, the heretofore almost continuous excitement resolving itself into violent maniacal outbursts, with intervening periods of quiescence, these gradually becoming of longer duration and assuming more and more the character of stupor. While in the stuporous state she would remain immovable for minutes or hours, and would not respond to questions. If taken hold of and compelled to change her posture, she would rouse up and curse, abuse, scream, and occasionally attempt to fight, after a short time relapsing into a condition of apathy. As the state of stupor deepened and grew more continuous, it was observed that her limbs retained the posture given them, and in a short time she exhibited a very typical condition of catalepsy; her muscles offered no resistance to movement, but held the limbs and trunk in any position in which they were placed; she would sit or stand for hours as impassive as a graven image, staring before her, but seeing nothing. The explosions of excitement became of briefer duration and rarer occurrence, and finally ceased altogether; after this she would remain quiet and immovable for days together, persistent mutism accompanying the stupor. During all this time emaciation was slowly progressive; she had a constant rise of temperature, reaching at times 102.5°; had night-sweats, diarrhea, a hectic flush on the cheeks, cough (occasional only, and very slight), scanty muco-purulent expectoration, in which, after several failures, the bacillus tuberculosis was detected. The physical signs of tuberculous disease of the lungs were in the beginning very few and inconclusive; dulness would be well shown at one examination, only to disappear entirely within twelve hours, and the abnormalities of respiratory sounds showed many variations from time to time. Cavities were detected toward the close.

After the woman became helpless and lay abed, she would remain in one position until moved by the nurse; she seemed almost devoid of sensation; the flies crawled over her face and into her open eyes and mouth unmolested and unnoticed; pins thrust through her skin called forth no evidence of pain; she exhibited almost no sign of life, save in her feeble heart-action and shallow respiratory movements.

The disease reached its inevitably fatal termination six months from the time of the return of tuberculous symptoms, two years after the onset of insanity.

This case offers an example of a fairly typical katatonia, but fails to illustrate the "verbigeration" that Spitzka in his definition makes an essential feature of the disease, and that Kahlbaum would regard as the most characteristic single symptom. The woman undoubtedly had tuberculosis at the time she was brought to the hospital, the accompanying

mental state being depression with a tendency to stupor; a remission or recovery from the tuberculous malady marked the maniacal period, and the return of the tuberculosis, with its steady progress toward a fatal termination, characterized the period of stupor and mutism, with cataleptic states.

The pathology of katatonia involves some considerations of especial interest. It seems undoubted that the scrofulous diathesis acts as a predisposing cause, if, indeed, it be not essential to the development of the disorder. Probably three-fourths of the fatal cases die of tuberculosis. Kahlbaum found in his post-mortem examinations many evidences of basilar meningitis and healed hydrocephalus. Kiernan, discovering similar lesions, draws the inference that a "basilar meningeal process of tuberculous origin" has existed in infancy.

Kiernan also found in one case a condition of mild sclerosis of the spinal cord and anterior pyramids, approximating in character senile sclerosis, and suggesting a possible connection between this lesion and the motor symptoms of katatonia. A somewhat marked opacity of the pia-arachnoid in the region of the Sylvian fissure and Broca's center, noted in many cases, has been assigned as the pathologic basis of the abnormalities of speech. These claims must be regarded as not yet fully proved.

Other appearances noted have been: passive venous engorgement of the vessels of the brain and pia; gelatinous exudate into the meshes of the pia-arachnoid; exudations upon the inner surface of the dura; exudation of "mucoid substance" upon the floor of the fourth ventricle; accumulations of lymphoid cells in the perivascular and pericellular spaces; pigmentation of pyramidal cells. In the later stages of the disease, *i. e.*, when dementia has become well established, there is atrophy of the convolutions, as is frequent in the late stages of many other forms of mental disorder.

All of the pathologic changes mentioned have been discovered, singly, or combined in various ways, in other forms of insanity, and characteristic lesions in katatonia have not yet been demonstrated.

The results of post-mortem examination in the case under consideration resulted as follows:

Autopsy, four hours after death. Emaciation was extreme, the weight of the body being about fifty pounds. Rigor mortis was entirely wanting.

The scalp was thin, the hair scanty. The antero-posterior diameter of the skull was 18.0; the transverse, 13.9; the circumference, 51.2 cm. There was no visible asymmetry; the bone was of medium thickness and soft; the sutures were mostly open; the diploë thin and red; the inner table pale, deeply grooved, and pitted. Small blood-coagula were found in the longitudinal sinus. Underlying the dura, on the left side, was a soft, friable, deep-red membrane-like blood-clot; the clot was evidently a recent one, and adhered very slightly to the inner surface of the dura; it measured about one-sixteenth of an inch at its thickest part; it covered almost the entire convexity of the left hemisphere, thinning out at the edges, where it lost its blood-clot character, and seemed continuous with a pale-yellow, very thin, and soft membrane, which extended a short distance beyond the blood-clot in all directions. The right half of the dura was free from disease. The dura at the base of the brain showed no evidence of existing or of former disease. The pia was thickened and edematous over the entire vertex, and opalescent along the lines of the larger bloodvessels and fissure of Sylvius. On the left side of the vertex it was deeply stained where it had lain in contact with the hemorrhagic clot, and near the anterior extremity of the interparietal fissure there was an extravasation of blood into the sub-arachnoid space. The pia at the base, and its various laminæ, were normal in appearance. The arteries of the base of the brain—the circle of Willis and its branches—showed no lesion or abnormality of anatomic disposition. The weight of the right hemisphere of the brain was 18¼ ounces; of the left, 18¾ ounces; of cerebellum, pons, and medulla, 5¼ ounces=42¼ ounces, the pia attached. Some atrophy was apparent in the gaping gyri and shrunken convolutions of the anterior lobe and motor area. There were no abnormalities of gyral arrangement worthy of mention. The brain-tissue was softish and watery; the gray layer was pale; the puncta vasculosa few; the lateral ventricles were large, and contained a little fluid; the ependyma and choroid plexus were normal. The basal ganglia, the pons, the medulla, and cerebellum exhibited no lesion.

The spinal cord was not removed.

The fat panniculus was absent from the thorax. The muscular tissue was atrophic, the costal cartilages unossified. The ribs and sternum were soft and fragile, bending easily, and seemed in great part lacking in inorganic salts; the ribs were readily cut with a knife. Upon firm compression a reddish semi-fluid mass could be made to exude from the cut ends of the bones. The precordial space was small. The pericardium showed no signs of disease. The heart was soft, pale, and relaxed; the superficial vessels tortuous; no atheroma or other disease was visible to the naked eye. External deposits of fat were not present. The muscular tissue was pale. All of the cavities contained soft, dark clots, and in each ventricle was a firm fibrinous clot which extended some distance into the aorta and pulmonary artery. There was no lesion of the valves. The aorta contained a few pale-yellowish atheromatous spots. The weight of the heart was 5½ ounces.

Old, firm adhesions existed at the apex of the right pleural cavity. Little or no fluid was present, and no signs of recent disease. The right lung was soft, pale, and edematous; there was slight anthracosis; all the lobes contained scattered tuberculous nodules, most numerous in the upper lobe. The nodules were small and cheesy. No cavities or areas of consolidation were found. The bronchi

seemed normal. The weight of this lung was 10 ounces.

Old adhesions were present throughout the entire extent of the left pleura; there were no recent adhesions or signs of disease. There were cavities in both lobes of the left lung, containing very offensive purulent matter; two or three cavities were nearly an inch in diameter; there were numerous smaller ones, many cheesy nodules, and, especially in the lower lobe, extensive patches of consolidation. Some of the smaller bronchial tubes were surrounded by caseous masses.

The bronchial lymph-nodes were filled with tuberculous nodules and anthracotic masses.

The peritoneum showed no lesion. The spleen was small, soft, and dark-colored; the capsule thin; its weight was 2½ ounces. The liver was dark, well filled with blood, and relaxed; its weight, 29 ounces. The gall-bladder was nearly empty. The right kidney was firm, pale, and small; the capsule slightly adherent, the cortical substance thin, pale, and the striæ indistinct; the pyramids were also pale, the boundary-layer a little darker in color; weight, 3 ounces. The left kidney weighed 3¼ ounces, otherwise resembling its fellow.

The supra-renal bodies were small, pale, and firm. No gross lesions existed. The stomach and intestinal tract were free from disease. There were no tuberculous ulcers or nodules in the small intestine, and the mesenteric glands were normal. The abdominal aorta showed some yellow splotches of atheromatous disease.

The ovaries were small, white, and scarred; the uterus, tubes, and ligaments were normal. The bladder was empty and without lesion.

Sections of the kidney studied microscopically showed irregular thickening of the capsule; bands and patches of interstitial thickening, with numerous round cells; some of the bloodvessels had thickened walls, some were tortuous. The Malpighian tufts showed an increase in nuclei, and proliferation of the cells lining the capsules; some of the tufts were entirely destroyed. The epithelial cells in the convoluted tubules were very granular and showed some disintegration; some tubules were entirely choked with débris, some contained casts. In the left kidney several small tuberculous nodules, with giant-cells, were discovered. The sections from the right kidney showed no cheesy nodules. With this exception the minute appearances of the two organs were very similar.

Preparations made from the dura and the underlying clot exhibited practically no lesion of the dura; the delicate film extending beyond the edges of the clot was composed of lymphoid cells, a few red blood-cells, and fibrin-shreds, held together by a homogeneous gelatinous material; it contained no capillaries. Between the blood-clot and the dura, this layer, if it existed, could not be detected; what was seen was a normal dura, and lying against its inner surface, a mass of coagulated blood; the delicate film referred to, and the mass of blood-cells of the clot seemed to merge into one another at the periphery of the clot. There was no evidence of inflammatory change in the dura, and no newly-formed bloodvessels were detected in the clot anywhere.

Aside from the tuberculous disease of the lungs, the nephritis, and the sub-dural hemorrhage, the autopsy was negative in result. The basal dura was smooth and to the naked eye of normal appearance; the pia covering the base, its extensions, and that portion in the region of Broca's center, were not noticeably affected. The brain and its membranes showed no peculiar or characteristic change.

The hemorrhage beneath the dura affords an instance of "pachymeningitis interna hæmorrhagica." In this instance, as in the other cases discovered in our post-mortem room, the effusion of blood would seem to be the primary lesion, the very insignificant changes present in the dura occurring as a consequence of the irritation of the extensive blood-clot. Sub-dural hemorrhage is not of rare occurrence among the insane. We have found fourteen instances in 142 autopsies—nearly 10 per cent.

The next case, while less typical than the one already reported, is still markedly katatonic in character. There is, however, no stage of exaltation, no verbigeration; the cyclic changes are confined to exacerbations of melancholia, with stupor and catalepsy, with intervals of partial recovery, terminating in delusional dementia.

Case II was a minister of the Methodist Church, of neurotic heredity, unmarried, of a liberal education; lues and alcohol were excluded. At the age of twenty-seven he had an attack of mental disorder of a melancholic character, recovering entirely and resuming his clerical work after a short time. Four years later he had a sudden and unexpected return of mental disorder—he was preaching, suddenly stopped short, bowed his head upon his hands, and remained immovable; he was taken from the church by his friends, and found to be in a cataleptic condition, and mute. After several months of stuporous melancholy with persistence of the cataleptic state, he was placed in the insane hospital. After four months a slow improvement began, and within twelve months he was comparatively well and talked readily and rationally; he was quiet, able and willing to work, and his physical condition was better; some vague religious delusions persisted, with occasional cataleptoid seizures. He remained unchanged for five years, and was then taken home by his family; but, soon relapsing, he was returned to the hospital in much the same condition as when first admitted, although the stupor was less pronounced and the mental depression more active; he had made one attempt at suicide while at home. He continued melancholic, hysteric, nervous, and emotional, with fits of reverie and cataleptic immobility, for some months; he exhibited religious delusions, and received commands from heaven; he occasionally refused food; and had periods of mutism of varying duration. After a time the active depression subsided; he grew less emotional and

nervous; the cataleptoid symptoms became less prominent; and his bodily state improved. He has never recovered; his present state (fourteen years after the first appearance of the insanity) is one of secondary paranoia, with fixed religious delusions and some dementia; at long intervals there are some cataleptoid manifestations; he is quiet and harmless, and talks readily and coherently. Physically he is spare and somewhat cachetic in appearance. He has an organic heart-lesion; casts and albumin are found in his urine; there is some arterial hardening, but no symptoms of tuberculosis. The case is hopelessly chronic.

The third case is one of melancholia attonita, with mutism and cataleptic symptoms. The cyclic feature is wanting.

Case III was a white man, a peddler, married, with limited education. The family history could not be obtained. At the age of thirty, having previously exhibited no eccentricity or intellectual weakness, he suffered a series of financial and domestic misfortunes; grew nervous and despondent, and eventually passed into a condition of acute melancholia, with delusions of suspicion and persecution, rendering necessary his commitment to the insane hospital.

The active melancholic symptoms soon gave place to a state of melancholic stupor, attended with cataleptoid manifestations. He lay in bed for months, would not speak, would not eat, was utterly inert and passive. He had one epileptiform convulsion four months before his death. He was fed through the stomach-tube for three months; and finally died of marasmus eighteen months after his admission to the hospital. There was no autopsy.

Case IV is even less typical. It is a simple primary confusional insanity, with catalepsy:

Case IV was a negro man, a laborer, without education, and unmarried. Signs of the insane constitution were marked. The family history was unobtainable. When nineteen years old the man had typhoid fever, followed by mental weakness taking the form of acute dementia and slowly increasing in intensity; after the stupor was well established, cataleptic symptoms appeared, and in this condition, which might be described as a "primary dementia, with catalepsy," he was admitted to the insane hospital. His condition has not changed materially since that time (sixteen months). He sits immovable, refuses to speak, will not go to his meals or make any attempt to take his food, until with plate before him and knife and fork in hand he is given a few mouthfuls by the nurse; he then finishes his meal unassisted. The cataleptoid states are well marked, but occasionally the man will change his position voluntarily. He comprehends perfectly, and, even when in a state of cataleptic immobility, watches sharply what is done by others near him, following with his eyes all movements made. There is no depression or exaltation, no cyclic changes whatever; he has not spoken since his admission.

His physical health is poor. His urine contains albumin and tube-casts, and there are some symptoms of tuberculosis.

In Case V we have many of the symptoms of katatonia, associated with exophthalmic goiter:

Case V was a white female, of a slightly neurotic, but unusually intelligent family, liberally educated, quick-witted and vivacious, and with some signs of the insane constitution. At the age of nineteen her previously recognized nervousness and hysteric tendencies became more marked, and were accompanied by cardiac palpitation and circulatory disorders; soon an enlargement of the thyroid gland, with exophthalmos, made itself apparent, and in time a typical picture of exophthalmic goiter was presented. The action of the heart was irregular and feeble, and at times very rapid—approaching two hundred a minute; there was much vasomotor disorder, with cyanosis of the skin and profuse sweating; dyspeptic symptoms, irregular and scanty menstruation, with a condition of general mental instability, also existed; the woman was moody, fretful, had fits of passion, and often grew angry with her relatives and friends, and made most unreasonable requests. She had frequent hysteric seizures; when at her worst, cataleptoid states were occasionally present.

About a year after the onset of the disease she had an attack of continued fever, resembling typhoid, which confined her to bed for several months and came near proving fatal. Two years later she had a similar, or, if possible, more severe attack, but again recovered, and then began improving in physical state; the goiter and exopththalmos slowly diminished, and she gained greatly in weight. There was, however, no change for the better in her mental condition; on the contrary, she became more irritable and more unreasonable, with exaggerated ideas of self-importance; she developed a fondness for social gaieties, spent money wastefully, dressed extravagantly, and sometimes fantastically; if crossed in any way she flew into a passion or had an hysteric attack, and at these times was markedly cataleptic. She ran away from home during the night on one occasion, and, after giving a great deal of trouble to her family, was finally sent to the insane hospital, seven years from the time the exophthalmic goiter was recognized. She then seemed in good health, with mental symptoms as sketched. She exhibited a great variety of symptoms during the succeeding three years, with a gradual failure in health and a steady passage into dementia. Her chief mental attitude was one of mild exaltation with a feeling of self-importance, a theatric and declamatory speech, which, based upon unusual intelligence and education, made a very interesting combination. At irregular intervals this excitement would give place to usually brief periods of hysteric melancholy, with marked cataleptoid symptoms; and she had two long periods of melancholia attonita, with occasional refusal of food and mutism, marked catalepsy and confinement to bed. The last of these covered the last months of the patient's life; she steadily emaciated, had a rise of

temperature, and diarrhea, night-sweats, and other symptoms of tuberculosis. She died at twenty-nine, ten years after she became insane. There was no autopsy. During the entire time of her stay in the hospital she exhibited the somatic evidences of Basedow's disease, in slight goiter, slight exophthalmos, tachycardia, circulatory abnormalities, and profuse sweating. Omitting the atypic initial stage and Basedow's disease, we have remaining in the alternating mental states, verbigeration, paranoiac exaltation, atonic melancholy, mutism, cataleptoid and hysteric conditions—a very characteristic katatonia.

Case VI was a white female, of limited education and neurotic heredity—her mother, brother, and sister being insane. Signs of degeneracy were marked. She married at twenty-two; a year later miscarried at the seventh month, and had a mild attack of what may be termed hysteric melancholia, but recovered after a month. Two years later she miscarried a second time, again at the seventh month, and passed into a state of atonic melancholy, in which, three months later, she was admitted to the hospital. She at first exhibited some persecutory delusions, but stupor soon became the most prominent symptom. She lost flesh rapidly. On admission she was in a state of complete and typical "melancholia with stupor," sitting for hours in one position, staring vacantly, the saliva running from her mouth. She would not speak, neglected to eat, to attend to calls of nature, etc. Her limbs offered a passive resistance to movement, and preserved for a short time any position given them, though cataleptic symptoms were never pronounced. She was thin, very pale, and anemic. The hemoglobin was estimated at 20 per cent., the red corpuscles at 3,214,000 to the cubic millimeter. Albumin and casts were found in the urine, and there was edema of the feet, legs, and face. There was cyanosis of the hands and general sluggishness of the circulation. There was an anemic heart-murmur, but no lung-complication and no fever. Put in bed, she lay passive and immovable. Tr. ferri chloridi was given. Food was administered with a spoon by a nurse. The patient had at times nausea, vomiting, and diarrhea. After three months the hemoglobin had risen to 62 per cent., and the red corpuscles to 4,212,000, albumin and casts being still present. She became less demented and would eat voluntarily, and reply to questions. She continued slowly to grow better in mental state, and got out of bed and gained flesh. After about twenty months she had an attack of excitement and irritability, and was very violent and pugnacious for a few weeks; she then became quiet and went into a second period of melancholia with stupor, with partial cataleptic states, circulatory sluggishness, and mutism. This passing off left her in a state of "secondary paranoia," *i. e.*, she was perfectly quiet and conversed rationally most of the time, had a good memory, and gave little indication of mental disorder, save for her fixed and systematized delusions and occasional slight exhilaration. She has, since she recovered from the last attack of melancholy, gained a great deal in weight; the hemoglobin has risen to 82 per cent., the corpuscles to 5,112,000. The urine still shows an occasional cast and a trace of albumin. The mental aberration is now of about three years' standing and will probably persist in some form.

In addition to the cases here sketched we have had probably as many more that exhibited cataleptoid symptoms in some form, but were in other respects even less typical of the condition under consideration than Cases III, IV, and VI. Including all of these as katatonia, the proportion of such cases, as already mentioned, is still very small—not more than half of 1 per cent. of our insane population.

INDUCED LABOR AS RELATED TO PUERPERAL ECLAMPSIA.[1]

By H. C. RIGGS, M.D.,
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The work of modern investigators into the pathogenesis of eclampsia is only less remarkable for its painstaking labor than for its inadequate results. The theories deduced are almost as many as the writers deducing them. But in spite of this diversity of theory and conclusion there is discernible a tendency to agreement upon certain points of the most vital clinical importance.

It is probably fair to say, then, that modern opinion inclines to consider eclampsia as due to an intoxication either from retained body-excreta, or from the direct presence of microörganisms or their ptomaïns in the circulation; the elimination of both excreta and ptomaïns being retarded or prevented either by the simple renal congestion of pregnancy or by any coexisting form of kidney-lesion. If this be a proper statement of our present position, the supreme causative importance of the pregnant uterus as an etiologic factor becomes immediately evident. The uterus as it enlarges interferes in a greater or less degree with the circulation in the abdominal viscera and in the lower extremities. Varices of the rectum and limbs, constipation, vesical irritation, polyuria, albuminuria, are well-marked evidences of the mechanical results due to increased abdominal tension from the enlarging uterus. This congestion is, in the majority of cases, well sustained by the organs during the time of gestation, and disappears, leaving no trace when the fetus is expelled and the uterus returns to its normal size and position. But in a certain percentage of cases, fortunately small, serious consequences remain, especially in the kidneys. These are:

a. In previously healthy kidneys the usual con-

[1] Read before the Kings County Medical Association, December 12, 1893.

gestion may become so severe as to prevent their free action.

b. The kidneys may pass beyond simple congestion into some one of the forms of structural renal lesion.

c. A previously existing nephritis may be aggravated in character and intensity.

It is in some one of these three classes that we find most of our cases of eclampsia. In saying this we have to recognize that there is a certain small group of eclampsias not to be included in such a classification, namely, those classed by Dührssen as "eclampsia reflectoria," in which the symptoms seem to be produced by peripheral irritations acting upon hyperesthetic nerve-centers. But leaving out this small group our original classification holds good and we are forced again to perceive the important relation of the pregnant uterus to the causes of eclampsia. This is further made plain by the fact that in 93 per cent. of eclamptic seizures the symptoms subside upon the removal of the fetus and the contraction of the uterus.

With these points in mind let us proceed to consider, very briefly, the modes of treatment at our command, and their applicability to the conditions which confront us in this class of cases. It will be convenient in discussing the subject of treatment to divide it into two parts: 1. The treatment of cases occurring before the child is viable. 2. The treatment of cases occurring after the child is viable.

Let the first class include all eclampsias occurring up to the end of the sixth month of gestation.

The problem here presented is threefold: 1. The preservation of the mother's life. 2. The retention of the living fetus *in utero*. 3. The relief of the convulsive symptoms and the prevention of their recurrence. Without going into details, as it is my purpose especially to discuss cases coming under the second division of the subject, we may probably best attain these ends by prompt resort to anesthetics and other sedatives, such as chloral and morphin; and then by the use of diuretics and diaphoretics such as hot blankets, hot air baths, pilocarpin, and nitroglycerin. All other remedies failing, rapid dilatation of the cervix and emptying of the uterus are justifiable, but should probably be regarded as a last resort.

Our second class includes those cases occurring between the end of the sixth month and full term. Here the indications to be met are the same as before. But we have now a new factor to deal with, *i. e.*, a living fetus *in utero* capable of continuing its life not only in the uterus, but out of it. The term "viable" as here used is of course relative. Fetal viability varies greatly within the limits of the so-called viable period. It increases rapidly in degree through the eighth month, and more slowly during the first half of the ninth, so that during the last two weeks of gestation the child is almost as well adapted for independent existence as at full term.

Now with this factor of fetal viability added, what is the best solution of the therapeutic problem presented? Along what line may our treatment advance, with the best results to mother and child in the greatest percentage of cases?

The answers to these grave questions cannot be unanimous. No medical question can be answered in that way. But professional opinion, it seems to me, is more and more converging upon prompt induction of labor as the procedure which best meets the conditions of the problem. We need not stop to say that other methods of treatment now in vogue are far from satisfactory. This is universally admitted.

The advantages of this operation are its speed of execution and its effectiveness of action in relieving the eclampsia and in preventing its recurrence.

The objections to it are: 1. Possible destruction of a fetus that might have a chance of life if less radical means were used. 2. Risk of death to the mother either from shock or sepsis. Let us consider these objections in the light of modern statistics and see whether the danger to fetal and maternal life is increased, or whether it is diminished by this procedure.

First as to the maternal mortality from induced labor:

Dr. McLane, in reporting the first thousand deliveries at the Sloane Maternity, notes 12 cases of premature labor for contracted pelvis, with no deaths of mothers.

From the Dresden Clinic there are reports of 45 induced labors with only one death of a mother.

Wyder, of Berlin, notes 306 cases with a maternal mortality of 3.9 per cent.

In his little book on *Practical Midwifery*, Reynolds says: "Prognosis of induced premature labor should differ but little from the prognosis for labor at term, as far as the mother is concerned."

The cause of death in most of the cases quoted is septic poisoning. As these deliveries were performed chiefly for contracted pelvis the danger of sepsis was greater, owing to the unavoidable traumatism and pressure from the instruments; so that with reasonable care statistics should bear out the statement of Reynolds exactly, when the operation is done for eclampsia, when the child is smaller than at term, and the pelvic diameters are normal.

It is fair to say, in view of these facts, that considered merely as a therapeutic agent this operation is hardly more dangerous to the mother than many of the well-accredited drugs which we use with more

or less frequency in eclampsia. Pilocarpin and veratrum, chloroform and morphin, all occasionally claim their victims. Few drugs and fewer operations can be called absolutely safe. So with this operation, it is not devoid of risk, but the risk sinks out of sight in face of the unspeakably greater dangers of the condition we seek to relieve.

Secondly, as to fetal mortality from induced labor. This phase of the question has always been the one upon which opinions have differed most radically, as regards both its medical and its moral aspects. It is upon this side of the question, too, that statistics have been most unfavorable.

But even here, time and careful work and improved technique are doing much to reduce the prohibitive figures of former years. The earlier in the viable period the operation is performed the less satisfactory are the results as regards the life of the child. Tarnier's methods of care for premature children have done much to improve the statistics. He reports a death-rate of 36.4 per cent. in seven-months cases and of 14.3 per cent. in eight-months cases. Of course, these results are obtained in hospitals in which the facilities for caring for the children are of the very best. But I think it can be claimed that a reasonable approximation to these figures may be reached in private practice, if the persons caring for the child are of ordinary intelligence and are properly instructed by the physician.

Then, too, we have to remember that the conditions for which premature labor is induced are in themselves very dangerous to the fetus, as well as to the mother, for whose sake the operation is usually done.

In eclampsia, for instance, children are born dead from asphyxia or other causes connected with the systemic condition of the mother in a very large percentage of cases. Actual statistics on this point seem rather inaccessible, but a comparison of many estimates places the fetal mortality in antepartum eclampsias at about 30 per cent.

And now let us sum up what we have tried to present in favor of induced labor, considered merely as an operative procedure, without reference to its applicability to particular classes of cases. We find it to be:

1. An operation of simple technique which may produce its results rapidly or slowly, as may be desired.

2. An operation whose mortality for the mother is relatively and actually low—little, if any, greater than that of natural labor.

3. An operation whose fetal mortality is actually high, but which progressively lessens as the period of fetal viability approaches full term.

Finally, let us see how the features of this operation square themselves with the therapeutic problems presented in the treatment of eclampsia. By the terms of the operation we exclude consideration of all cases in women less than seven months pregnant, for such an operation before the seventh month is more properly termed an abortion; and we also exclude in the same way cases occurring during or after spontaneous labor. We will consider the applicability of the operation to these cases, first, as a direct remedial measure, and, secondly, as a prophylactic measure.

1. In the presence of eclamptic convulsions delay amounts almost to malpractice. After controlling the reflexes by sedatives our duty, it seems to me, is the immediate use of the most effective and most rapid remedial agent to be had. We have shown that convulsions cease in 93 per cent. of the cases as soon as the uterus is empty. We have shown that the maternal mortality is practically nothing from this operation, which will promptly empty the uterus. We have shown that the fetal mortality of induced labor, while high, is less than the fetal mortality from eclampsia, in all but the earliest part of the viable period. We have shown that the operation is simple and may be completed very rapidly.

These facts seem to demonstrate that the induction of labor is the most efficient and at the same time a reasonably safe operation in these cases.

In view of this demonstration and in view of my own experience, which, while not large, has been terribly instructive; and in view of the experience of a growing number of my professional brethren, I advocate most strongly the immediate induction and termination of labor by means of manual dilatation and extraction of the child by forceps or version. And I wish to be understood as advocating it not as a procedure of last resort but of first resort, a procedure not of necessity but of election.

The difficulty in applying this operation as a prophylactic against eclampsia lies in the vagueness of the premonitory warnings of the approaching convulsions. Most of the important signs of an attack are those which we commonly associate with uremia.

There are many good authorities who consider that induction of labor is not only justifiable but necessary in the presence of edema and albuminuria, which become constantly worse under proper treatment and diet.

Lapthorne Smith (in a note to the *Medical Record* of October 28, 1893) says: "In fact, I have gone so far as to hold that it was our sacred duty to terminate every pregnancy as soon as we discovered that the urine was loaded with albumin, for if we allowed this state of affairs to go on too long the kidneys might become irretrievably injured."

Minor premonitory symptoms, such as frontal headache, epigastric pains, uncertain vision not accompanied by urinary changes, if they do not in themselves constitute an indication for inducing labor, should at least serve to put us on our guard and in readiness to operate at a moment's notice.

Of course, the question of inducing labor as a prophylactic becomes a new question in each case. Only a survey of all the facts can determine for or against it. Prof. T. G. Thomas, in his lectures on Abortion, says: "I would say incidentally that I often induce premature labor, and I regard it as a procedure of the greatest possible importance. With the experience which we now have, it can only be regarded as trifling with a woman's life to allow her to go to full term in cases of aggravated albuminuria from puerperal nephritis."

As to the prophylactic use of this operation my contention is that it is practicable, legitimate, and effective within the limits which we have just laid down.

I am aware that the facts and conclusions I am presenting are not new. With the added weight of great names and great experience they have been stated far more clearly and more powerfully than I can hope to state them. But they have not yet become the fixed law of procedure in the profession at large. Iteration and reiteration is the necessity in promulgating a matter of this kind. And it is in the hope of obtaining for it the weight of your assent and the power of your personal example that I have ventured to open this subject before you for discussion this evening.

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6. Ibid., May 6, 1893, p. 569.
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10. T. G. Thomas: Abortion, p. 8.

Statements and Facts to which Physicians cannot Testify.—In an action to recover for personal injuries, a physician cannot testify as to statements made to him by the party suing, when the latter calls on him after the suit is brought in order to give him such information as will enable him to testify as an expert at the trial. Neither can he testify as to the nature of an internal injury received six months before, and which has since been healed. So holds the Supreme Court of Errors of Connecticut, in the case of Rowland *vs.* Philadelphia and Baltimore Railroad Company. In this case the witness had been told by the party that his ribs had been broken, but had healed. With regard to this, however, it was held that he could not testify for either of the reasons given.

ORIGINAL LECTURE.

TUMOR OF THE BRAIN SIMULATING A VASCULAR LESION; TO WHICH IS ADDED AN ACCOUNT OF THE AUTOPSY, WITH REMARKS.[1]

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The case which I wish to study with you to-day is of especial interest, because the most obtrusive symptoms point to an entirely different lesion than the one from which the patient is suffering.

Michael P. K., twenty-seven years of age, of New York, a waiter, single, white, living in Colorado for the past seven years, was admitted into the nervous wards of the hospital about 2.30 P.M. yesterday in a semi-conscious condition. His temperature was 98.4°, the respirations 22, and slightly stertorous when he was not aroused; the pulse full, and 64 per minute. The resident physician does not know whether any paralysis was present at the time of his admission or not, as he did not make any examination to determine the point. During the afternoon, owing to the kind perseverance of the nurse, she succeeded in arousing him sufficiently to get some points in his history. He came of a family of hard drinkers, and he had five brothers, all of whom indulged freely in the use of alcohol. The patient stated that he had always enjoyed good health until about six months ago, when he contracted a severe cold. Since then he has not been very well; at times he has felt all right, and at others he has complained of a numb pain in the head, and a confused sensation, which prevented his thinking connectedly.

It was ascertained from his acquaintances that up to the time of the occurrence of his present trouble he had been occupying a room in a lodging-house, and nothing wrong was noticed by any of the lodgers until yesterday morning, when he arose, apparently as well as usual, and began to dress himself, but before he had completed his toilet he fell to the floor. When found, a short time afterward, he seemed confused and was unable to rise.

At the time of my first visit, at 8 P.M., a few hours after his admission into the hospital, he was lying quietly and sleeping, but his respiration was slightly noisy when left to himself. His temperature was normal, and equal in each axilla, the pulse 72, and rather full and strong. He was easily aroused from his stuporous sleep, and for a few moments seemed to realize what was said to him; but if left alone, he immediately relapsed into an apparently unconscious condition. His left arm and leg were almost completely paralyzed; the face was apparently unaffected, and he protruded the tongue in the median line. Sensation seemed to be normal. The right knee-jerk was slightly increased; the left a little greater than the right. The plantar reflexes were absent, and no ankle-clonus could be elicited. The cremaster and abdominal

[1] A Clinical Lecture delivered at the Arapahoe County Hospital, Denver, Col.

reflexes were slight on the right side and absent on the left. The pupils were equal and widely dilated, but reacted slightly to light. There was no paralysis or paresis of the external ocular muscles. On examining the fundi of the eyes a condition of bilateral optic neuritis was found. The disc was more swollen in the right eye than in the left, but the latter had reached a more advanced stage, and presented distinct atrophy of the optic nerve, with arteries very small. The other special senses, so far as I was able to determine, were normal. The urine was free from albumin and sugar, and the lungs seemed to be in a normal condition. Headache was not complained of unless the man was aroused and asked about it, when he would say that his head pained, but his appearance did not indicate much suffering. His bowels were freely evacuated, and he slept during the night, unaided by a hypnotic.

His stuporous condition has deepened since my visit last night, and I have brought the patient before you to-day so that we may study his condition together, hoping that I may be able to bring out some points in connection with this case which may aid you, even in the absence of a history, in dealing with persons found in a state of partial or complete unconsciousness.

On reëxamining our patient to-day we find him in a condition very much the same as that in which I found him at my first visit some sixteen hours ago, with these exceptions: that the paralysis of the left arm and leg has deepened, so that their muscles are now nearly flaccid; that the left side of the face, from the nose downward, is slightly paretic; and that the state of stupor is rapidly passing into coma. You see that I cannot get any intelligent response from him. When I call to him he simply opens his eyes and moves his lips, and immediately sinks into a condition of blissful unconsciousness of his impending fate.

You must remember that a condition of partial or complete unconsciousness may be produced by syncope, from heart-failure; by chloral, opium, or alcohol poisoning; by uremia, epilepsy, or hysteria; or by an apoplectic state caused by apoplectiform attacks occurring in cerebral congestion or paralysis of the insane; by "simple apoplexy" in the aged, or by apoplexy from embolism, thrombosis, abscess, cerebral hemorrhage, or tumor of the brain.

You see, then, that we may have a more or less sudden disturbance of consciousness, from perversion of brain-function, and that this may be due either to direct or indirect causes acting upon the brain. In some cases of suddenly induced unconsciousness, even from structural brain-disease, there are but slight, if any, localizing symptoms, so that, in the absence of a consecutive and reliable history, you may at times be sorely puzzled to determine the cause of the unconsciousness. When persistent paralysis exists, especially if it is associated with optic neuritis, all such general causes of unconsciousness as syncope from heart-failure, chloral, opium, alcohol, and uremic (?) poisoning may be excluded. The bilateral optic neuritis, excluding lead-poisoning, uremia, and profound anemia, is positive proof that the trouble is organic, and therefore hysterical and epileptic coma, as well as "simple apoplexy," may be disregarded in the diagnosis of the lesion in the patient before us.

Having excluded all causes, except those of an organic nature, to which of the numerous organic brain-lesions may we attribute this man's condition?

For diagnostic purposes, these lesions may be divided, as regards the time consumed in their development, into sudden, acute, and chronic.

The sudden lesions are vascular in their nature, and are due to embolism, thrombosis, or cerebral hemorrhage. You must all realize the importance of a consecutive and reliable history of the patient prior to the development of the prominent symptoms of the disease, and an intelligent account of the mode of invasion of the disease. In the absence of such a history it is sometimes utterly impossible to make a diagnosis. With the light which a reliable history throws on a case, positiveness in differential diagnosis may be obtained by careful analysis and comparison of all the symptoms. Unfortunately, in the history of the present case, the information is meager, and it is questionable to what extent it may be relied upon. Prior to the development of the paralysis yesterday morning but little is known, except that for the past few months the man found it difficult to think, owing to what he called a confused feeling in his head. Pain in the head was only complained of as a heavy sensation. When I first saw him he made so many contradictory statements that I was unable to learn whether he had ever had syphilis. He was not seen until several minutes after he fell on the floor while dressing in the morning, and when found he was unable to rise and seemed stupid. He could give no account of this attack. It is fair to presume that the paralytic symptoms and mental confusion came on comparatively suddenly, although we must bear in mind that he might have gotten out of bed with impaired motility and mental power, and that these simply increased while he was trying to dress himself. In embolism there are usually no head-symptoms antedating the attack, and to justify the diagnosis of cerebral embolism we should be able to find a cause for the embolus, such as acute or chronic endocardial trouble. No such cause exists in this patient. In rare instances embolism gives rise to optic neuritis, but it is evident that this could not occur until several days had elapsed after the occurrence of the brain-lesion, so that we can exclude embolism in this case. Without going into a detailed account of the symptoms of thrombosis and cerebral hemorrhage, a consideration of these may be discarded in the diagnosis of our patient's trouble, as insufficient to account for the presence of optic neuritis, which does not arise from either of these vascular lesions.

You see, then, that a sudden or vascular lesion, although the paralytic attack was undoubtedly more or less sudden in its onset, will not account for all the symptoms which this man presents; I wish you to bear in mind, however, that while a vascular lesion will not account for all the symptoms, it would account for the rapid development of paralysis, and such a lesion may occur as a result of a more chronic malady and give rise to sudden symptoms, thus making a diagnosis, in the absence of a reliable history, exceedingly difficult. Of this I may have something to say later, in explanation of some of the symptoms presented by our patient.

The acute lesions of the brain are inflammatory in their

nature, and require from a few days to a week or more to reach their height. They are all, as a rule, attended with some rise of temperature and considerable headache. Whilst optic neuritis may appear early (fifth day, Gowers), atrophy, such as is found in the present case, is not seen until after the second week. So that normal temperature, absence of marked head-pain, the sudden onset of the main symptoms, a few hours ago, and the presence of optic neuritis, with beginning atrophy, enable us to exclude the acute organic brain-lesions.

We have left, to account for our patient's condition, which seemed on superficial observation to be due to some sudden lesion, one of the chronic organic brain-diseases. We can exclude the scleroses, and in the light of what history was obtainable at the time of the patient's admission into the hospital, together with the symptoms found on examination, we need to consider only two lesions, viz., tumor and chronic abscess.

The diagnosis between tumor and acute abscess of the brain is usually easy, but between tumor and chronic abscess it is sometimes most difficult, if not impossible, especially if we find ourselves laboring under the difficulties encountered in the present case, in which a reliable history and accurate observation of symptoms, prior to the sudden development of the apoplectic symptoms, are entirely wanting.

In chronic abscess there is usually the history of a cause of suppuration, such as chronic ear-disease, infective disease of the nose or of the bones of the skull, or suppuration in the lungs or elsewhere. In abscess of the brain one of these causes is found in about three-fourths of the cases. After the first disturbance, caused by the formation of pus, a latent period of several weeks, months, or years may follow, during which the patient may complain of slight or no brain-symptoms. The latent period is sometimes cut short suddenly by terminal symptoms resembling apoplexy, such as paralysis, convulsions, coma, and death.

Most tumors of the brain run a gradually increasing course, with decided head-symptoms, without a latent period, and with final symptoms in accord with the previous history of increasing gross organic brain-lesion. But we must remember that gradually-growing tumors in a portion of the brain, the destruction of which gives rise to no definite focal symptoms, may run a comparatively latent course, and finally bloodvessels may be encroached upon and occluded, giving rise to symptoms resembling thrombotic apoplexy. Again, in the course of tumor of the brain we may have the occurrence of a vascular lesion, in every way independent of the morbid growth. One such case was observed by me in this hospital about a year ago. The patient was suffering from a slowly-growing tumor attached to the dura on the right side of the brain, and a large hemorrhage occurred into the left corpus striatum and proved fatal in a few hours. The autopsy revealed advanced degeneration of all the large arteries at the base of the brain. The hemorrhage that sometimes occurs in the substance of vascular tumors rarely proves fatal.

Finally hemiplegia may occur in the course of brain-tumor, and death result; and the autopsy may afford no explanation of the suddenly-developed symptoms. Some years ago, Gowers (*Brain*, 1879, vol. i, p. 48) reported a number of cases of sudden paralysis occurring in the course of cerebral tumor.

The points in the case of the patient before us in favor of chronic abscess are: excluding a vascular lesion, as we have done already, terminal symptoms resembling apoplexy in a case of latent chronic brain-trouble, and optic neuritis.

Evidences in favor of tumor rather than abscess are: absence of a cause for the development of abscess (this is always a strong point against abscess); intense optic neuritis, as evidenced by considerable swelling of the right optic disc, and absence of rigor and fever, which so commonly attend the terminal stage of chronic abscess. All these symptoms, except optic neuritis, are negative ones in favor of tumor, but very positive against abscess.

The weight of the evidence is in favor of tumor of the brain, and I venture this diagnosis in view of the probability of being able to verify or disprove it by an autopsy in a few hours or days.

I wish to call your attention to the fact that, outside of gross organic brain-disease, renal trouble, lead-poisoning, and profound anemia will give rise to optic neuritis, but it has not been necessary to consider these, because of the positive evidence of a brain-lesion to account for the patient's condition, although, as a matter of fact, the urine is free from albumin, there are no evidences of chronic lead-poisoning, and the patient is not anemic.

Having made the diagnosis of tumor, is it possible in the present case to localize it? The base of the brain can be excluded, from the fact that the cranial nerves have not been affected; and the cortex of the convex surface is probably not the seat of the growth, in the absence of convulsions; and a growth in the cerebellum would not give rise to distinct hemiplegic symptoms, without interfering with the functions of the medulla or pons. In all these situations headache would probably have been a prominent symptom, and you remember that, on the patient's admission into the hospital, he stated that he had not suffered much from head-pain.

Excluding, then, these situations as the probable seat of the growth, we have left the centrum ovale in the right hemisphere. The growth did not have its origin in that portion of the centrum ovale occupied by the fibers of the corona radiata which connect the anterior two-thirds of the posterior half of the internal capsule with the cortical motor region, else paralysis would have been an early, instead of a late, symptom. The tumor has had its origin either anteriorly or posteriorly to the radiating fibers of the motor region, and these fibers have been encroached upon by a sudden extension of the morbid process to them. Whether the disease began anteriorly or posteriorly to the fibers of the motor region is not an easy matter to determine—especially so in the absence of a complete history. We learn that there was some difficulty in mental concentration for months, but this was not sufficiently marked to attract the attention of the man's friends. Lesions in the centrum ovale posterior to the radiating fibers passing to the motor region might run an almost completely latent course, but when the anterior lobe of the brain is the seat of tumor we should expect to find mental disturbance, such as apathy, inability to concentrate the mind, with,

probably, more or less moral obtuseness. In the present case, in the absence of a reliable history, I must confess that I am unable to make a more definite diagnosis as to localization than the centrum ovale of the right hemisphere.

In regard to the treatment of the present case little or nothing can be done. The patient is now comatose and he will not live more than a few hours, or a day or two at the most. It is too late to attempt to get the effects of medicine, and were we sure as to the exact location of the morbid process, the physical depression is too great to justify an effort for its removal by surgical means. I shall not discuss at length the probable nature of the tumor, but it is most likely syphilitic or gliomatous; although, as the patient dated the beginning of ill-health from a "cold on the lungs," it may be tuberculous. I will report further on this case at our next clinic.

(After the lecture the patient continued to sink into a deeper state of coma and died about twelve hours later.)

At the autopsy, made ten hours after death, by Dr. Axtell, in the presence of Drs. McLauthlin, Mack, and Hull, and myself, the brain only was examined. No abnormally firm adhesions of the dura to the bone existed. The sinuses and the veins of the dura were distended with dark, fluid blood. No clots were found.

The veins of the pia were everywhere filled with dark, fluid blood. There were no signs of inflammation of any of the membranes, and the pia readily stripped from the brain. The arteries at the base were empty and showed no evidence of disease. The left cerebral hemisphere appeared normal throughout. The centrum ovale of the right hemisphere, from near its posterior portion in the occipital lobe to a point opposite the middle of the fissure of Rolando, showed evidence of disease. This entire area was occupied externally by what appeared to be ragged brain-substance, some portions of which were softer than the normal brain-tissue, whilst others presented an increased resistance to the finger. The parts anteriorly and internally (toward the lateral ventricle) appeared quite soft. In the interior of this tumor-like mass was found, in one portion, one or two ounces of yellow, watery fluid, and in another, which was separated from the cavity containing the watery fluid by a portion of the growth, a sanguino-purulent gummy-looking material. Considerable of the yellowish, watery fluid was found in the right lateral ventricle. It is impossible to say whether this found its way there before death or during the dissection. Great care was used in examining the brain, yet, on account of the fluctuating condition of the whole of the posterior portion of the right cerebral hemisphere, a rupture of the wall of the lateral ventricle could easily have taken place. None of the fluid had gravitated to the fourth ventricle, making it probable that the fluid had escaped into the lateral ventricle during the dissection.

A microscopic examination was made by Dr. Axtell, whose report is appended.

The softened material surrounding the cavity containing the fluid showed nothing but granulation-tissue; no connective-tissue elements were found; leukocytes and red blood-corpuscles were found in abundance. It was simply softened, broken-down brain-substance.

Of the gummatous substance, a large amount of granular material, composed principally of granular leukocytes, and containing numerous red blood-corpuscles, was found. The hardened portion of the brain-substance posterior to the semi-liquid material showed the usual appearance of gummatous infiltration.

With the additional light which the autopsy revealed in the foregoing case, a few points can be more intelligently discussed now than during the patient's life. What was the cause of the sudden and grave symptoms and the speedy death? What part did suppuration play in this man's case; was it primary or secondary? Do not syphilitic growths infiltrate the surrounding brain-tissue?

It seems to me that the extensive softening and hemorrhagic infiltration, which were undoubtedly of recent date, prior to the syphilitic growth, and involving the coronal fibers going from the internal capsule to the motor region of the brain, were sufficient to account for the sudden paralysis. It is probable that the liquid material, which, before the sudden breaking down of the brain prior to the syphilitic growth, had been enclosed in a circumscribed cavity, after the softening was allowed greater freedom of motion, and thus, by its pressure on the external wall of the lateral ventricle and on the great ganglia at the base, added to the shock already set up by hemorrhagic infiltration and brain-softening.

After the man's death it was learned that he had been under treatment for a number of weeks for supposed syphilis of the brain, prior to his admission into the hospital, and had taken potassium iodid during this time. The treatment accounts for the yellowish liquid found in the interior of the growth. I have observed, post-mortem, several cases of syphilitic tumor which had been treated by potassium iodid, and in most of these, especially when large doses of the medicine had been used, a considerable amount of a straw-colored watery fluid has been found. I have not seen this state of affairs in cases that have not received anti-syphilitic treatment.

What part did the suppuration play in this man's case; was it primary or secondary? So evident were the characteristics of pus found at the autopsy, that at first I was inclined to regard the case as one of chronic abscess; but the induration of portions of the surrounding brain-substance and the microscopic examination both showed the presence of a growth; besides, the pus was not of the distinct greenish color so commonly met with in abscess of the brain. Moreover, there was no odor to the pus-appearing substance. Since, then, it is not likely the formation of pus antedated the growth, it must have been secondary to it and in all probability due to the destructive process of the rapidly growing tumor. This is the first case of tumor of the brain in connection with which I have found pus. I see no reason, however, why we should not have the formation of aseptic pus from the acute softening that may take place as the result of blocking up of blood-vessels from the encroachment of a growing tumor.

The third and last question that I will consider is: Do not syphilitic growths infiltrate the surrounding brain-tissue? Gowers, in the second edition of his *Diseases of the Nervous System*, vol. ii, p. 493, under the heading "Syphilitic Growths," says: "The adjacent brain-substance is softened and more or less displaced, but it is not infiltrated by the growth."

On the other hand, Bramwell, in his work on *Intracranial Tumors*, p. 216, in quoting from Heubner on the appearances of syphilitic growths of the brain, says: "This form of tumor is never sharply defined; on examining the edges by the microscope, one may see at points apparently normal a strongly-marked cellular infiltration, which gradually passes into the healthy tissue."

Ziegler, *Special Pathological Anatomy*, sect. ix–xii, p. 311, beautifully illustrates diffuse cellular infiltration (syphilitic) of the cortical substance of the brain in a case of gummatous syphilitic meningo-encephalitis, and on page 312, after describing, in connection with this illustration, the tendency of syphilis of the membranes to involve the adjacent brain-substance, he states: "The same holds for the nodes which develop independently in the substance of the brain and cord."

Delafield and Prudden, in their work on *Pathological Anatomy and Histology*, in speaking of gummy tumors, to which they devote but a few lines, only refer to coagulation-necrosis and degeneration as taking place in the surrounding tissue.

In a case of syphilitic growth of the brain, operated on for me by Dr. Parkhill about two years ago, in a man about thirty years of age, a cavity containing about four ounces of a yellowish, watery fluid was found, and microscopically the brain-substance was indurated and softened around this cavity for some distance, making the size of the growth, from naked-eye appearances, four and a half inches in its longest dimensions, by three and a half and three inches in its shorter. The hemisphere of the brain from which this tumor was taken at the autopsy was examined by a competent microscopist and found to be infiltrated with gummatous tissue around the growth, even in portions which appeared macroscopically to be normal.

It seems to me that since surgical operative procedure is recommended for the removal of syphilitic growths, it is of the first importance to recognize the fact that these growths affect the surrounding brain-tissue, both by necrotic softening and gummatous infiltration, and that in many cases of long-standing tumors of this nature the brain-tissue has been so extensively infiltrated that but little or no good results can be reasonably expected after the excision of the old tumor-mass. I believe that Mr. Victor Horsley is right in urging early operation for the removal of syphilitic growths, if symptoms do not rapidly disappear under vigorous anti-syphilitic treatment.

CLINICAL MEMORANDA.

CASES OF LAMINECTOMY FOR SPINAL FRACTURE.

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The hopelessness of laminectomy for old vertebral fracture is well shown in the following cases, and in suspected fracture of the spine should serve to enforce upon us the vital importance of immediate operation for removing the displaced bone. While it is true that the damage to the cord and its membranes usually occurs at the instant the bodies or vertebral arches are broken, it must be remembered that the possibility of restoring function and limiting secondary inflammations and degenerations rapidly decreases with time. Hence the surgeon should operate as promptly in spinal fracture as in cranial fracture.

When there is doubt as to the existence of spinal fracture or dislocation it is good surgery to make an exploratory incision. If no osseous lesion is present such an operation performed aseptically will add little risk to the patient's life. If such lesion is present, prompt removal of pressure upon the cord holds out the only chance for restoration of its function. Often the damage to the nervous structures will be irreparable, but the patient has at least been given a chance. The risk, from hemorrhage (always severe in laminectomy) and from operative shock added to the shock of injury, will nearly always be justified by the danger to life and physical usefulness inherent in the original traumatism.

I am a believer in operation, even in cases of old fracture, because it offers the only possibility of effecting benefit. If aseptic it is accompanied by but a moderate risk to the patient's life. Unless it is performed the surgeon has failed to give the patient the benefit of every possible chance. Of recent articles on this subject, that of Dr. A. M. Phelps in the *Journal of Nervous and Mental Disease* for July, 1893, will be found interesting. I record the histories of a few cases.

FRACTURE OF THE SPINE IN THE DORSO-LUMBAR REGION SUBJECTED TO LAMINECTOMY THREE TIMES; NO IMPROVEMENT IN SYMPTOMS.

A man aged thirty-one, residing in Massachusetts, fell a distance of twenty-four feet in December, 1891. He states that he struck upon his heels and then upon the sacral portion of the back, which came in contact with railroad ties. I am indebted to Dr. C. C. Laffer for the following notes, taken from the records of the Methodist Hospital, where he was admitted in October, 1893.

The fall was immediately followed by loss of power and sensation in the lower limbs and of the body up to the level of the crest of the ilium, with loss of the control of the bladder and bowels. The contusion of the soft parts of the back was followed by a bedsore, which later healed.

Six weeks after the injury, twitching of the muscles of the toes was noticed, which later became manifest throughout the entire leg. Five months after the injury the man was operated upon, and laminectomy of the ninth and tenth dorsal vertebræ performed. Some depressed fragments of bone were removed. The cord was compressed into a narrow band and crowded forward; the cord appeared healthy, but the membranes were not opened.

After the operation the patient regained some sensation in the testicles, which he still retains. A second operation was performed five months later, the site being in the lumbar region. No bone was discovered pressing on the cord. After this second operation there was improvement in the condition of the legs, which previous to the operation were covered with bedsores. At the present time the patient feels well, has a good

appetite, digests food well, sleeps well, but is constipated. Urinalysis showed a dark-reddish color of the urine, a heavy yellow precipitate, an ammoniacal odor, an alkaline reaction, and a specific gravity of 1021, without albumin or sugar. Phosphates, pus, blood, and epithelium were found present.

There was complete loss of power and sensation in the lower limbs, the penis, scrotum, buttocks, and body up to the level of iliac crests, except over the center of the abdomen (where sensation was good four inches below the umbilicus) and over the spinal column in a space two inches broad, extending about two inches down on the sacrum. The skin of the legs and feet was smooth and shiny, and that of the thighs in good condition, the whole of the limbs being warm. There was some edema. The toes were kept in the position of flexion; the ankle-joints were immovable, but the knees could be passively bent. The knee-jerk on both sides was much exaggerated. The clonus was marked. The scrotal reflex was obtainable from the abdomen. The skin was abraded over the metatarso-phalangeal joints of both great toes. There was a bedsore over the sacrum a little to the left of the median line, a scar of an old sore on the right side, also scars of incisions of former operations in the lumbar region. Some spinal deformity was seen just above the cicatrix of the previous operations.

The patient's condition showed very little change while I kept him under observation for a few weeks. The bladder was irrigated daily with boric acid solution, and the condition of the urine became better. The bedsores looked better, as the sloughs had been thrown off and granulations were present.

On November 7, 1893, I made an incision over the spinous processes of the vertebræ in the lower dorsal and upper lumbar region. The spinous processes of the eleventh and twelfth dorsal vertebræ and of the first lumbar vertebra were cut off, and the laminæ of the same vertebræ were partially removed. The cord and membranes were exposed. The latter were opened; the lower end of the cord seemed to be healthy, but the cauda equina was displaced and was evidently the seat of an old injury. Some cerebro-spinal fluid escaped. There seemed to be an angular displacement of the cord at the dorso-lumbar junction, which disappeared when the bone was removed. The former operations had evidently been in the region of the second and third lumbar vertebræ and a bony ridge had replaced the laminæ removed; this was cut away. I was willing to operate, because the appearance of the spine seemed to show that the whole area of displaced bone had not been removed. At the operation I found that the prominence of the first lumbar spine was largely, if not wholly due to the previous removal of the spinous processes below. The wound was closed with buried catgut and superficial silk sutures, and dressed with iodoform-collodion and gauze. The patient recovered fairly well from the ether and had an uneventful convalescence.

There seems (January, 1894) to be perhaps a little more mobility of the ankle, tarsal, and metatarsal joints, but otherwise the condition of the patient does not differ from that before the operation. His general health is good.

DORSAL LAMINECTOMY FOR FRACTURE OF THE VERTEBRÆ; NO IMPROVEMENT; DEATH FROM BEDSORES.

A man, aged twenty-two years, came under my care on May 23, 1892, for fracture of the spine. He was engaged in a lumber camp, and, as a heavy tree began to fall, he started to run from it. He was struck and felt as if his feet were caught. He was not unconscious, but was somewhat stunned. He was not actually caught under the tree, and the peculiar sensation which he noticed in his feet was probably due to an instantaneous paralysis. He was paralyzed in both legs and soon had the ordinary involuntary evacuations of urine and feces that occur after such injuries. The accident had occurred one year before the patient came to me for treatment, during which time bedsores had formed in the sacral region and on the hips. Sensation and movement below the navel were lost.

On June 16, 1892, laminectomy was performed at the seat of deformity in the dorsal region. The cord was found to be compressed by portions of bone, which were removed. Some days after the operation it was thought that there was some gain of muscular power, for the patient could slightly move his legs at the hip-joints. This appeared to be due to voluntary contraction of the psoas and iliac muscles. It is probable that he had had the same amount of control before the operation, but that it had not been observed. The wound, which had been closed with catgut introduced for drainage, remained aseptic. The catgut sutures, however, became absorbed before union was completed, and the wound gaped, showing an aseptic partially-organized blood-clot filling the wound. The lips of the wound were then brought together with silkworm-gut and gradually became entirely healed without suppuration. Five weeks after operation the patient died with symptoms of sepsis, which was probably due to the large bedsores which occurred on both hips. No autopsy was made.

DORSO-LUMBAR LAMINECTOMY FOR OLD FRACTURE OF THE SPINE, FOLLOWED BY HEMATURIA; NO IMPROVEMENT IN PARALYTIC SYMPTOMS.

A man, aged thirty-seven years, while driving a team under a lumber track, which was not high enough to permit him to maintain the upright position, stooped forward to go under the obstruction. Even in this position he was too high and was caught by the beams overhead and forcibly bent backward, sustaining an injury to the spinal column in the region of the last dorsal vertebra. He became paraplegic at once, and a physician of the neighborhood made an incision over the point of deformity in the spine, but apparently did not perform any operation upon the bones of the vertebral column. About five months and a half later he was brought to Philadelphia and put under my care. The patient was completely paralyzed as to motion and sensation in the lower part of the trunk and in both legs. There was incontinence of urine and feces.

A few days after admission the patient passed a small urinary calculus. His urine was of a high specific gravity and contained pus, mucus, and phosphates, showing the presence of cystitis.

On April 22, 1893, I made an incision four and a half inches long in the median line, exposing the

spinous processes of the eleventh and twelfth dorsal, and first, second, and third lumbar vertebræ. By means of a chisel and gnawing-forceps I removed the arches and spinous processes of the twelfth dorsal and first and second lumbar vertebræ. In this situation the dura was flattened and contained little if any cord-substance for about an inch and a half. There had apparently been a fracture involving the bodies, as pieces of bone or callus were found in the spinal canal. The dural sheath was opened and the cord found uninjured above and below. I made an attempt to bring the two ends of the damaged medulla together, in order that I might suture the upper and lower portions of the cord with catgut. The amount of cord which had been destroyed from the effects of the traumatism was so great that approximation was impossible. The edges of the wound were brought together across the gap left in the bony canal and a dressing of iodoform and collodion applied. A good deal of shock was shown, and the patient had a chill. Strychnin, digitalis, and nitroglycerin were employed and the patient gradually reacted. The day after the operation the patient had retention of urine, although before the operation there was constant incontinence of urine. By the catheter twelve ounces of bloody urine were withdrawn. This hematuria lasted for several days, and the urine had to be drawn on a number of occasions. Gradually the urine became free from blood and the incontinence returned. Two weeks later the patient was sent home into the country in a pretty weak condition, with a temperature above normal. His desire was so great to go home that I permitted him to leave, even though he was not strong.

Five months after the operation he was still living, but his paraplegic symptoms were unimproved. The operation, therefore, has been of no service, but was satisfactory in that it gave him and his friends the comfort of knowing that everything had been done that was possible in the way of surgical relief. For this they were grateful.

LAMINECTOMY FOR FRACTURE OF THE SPINE OF TEN MONTHS' DURATION; NO IMPROVEMENT; DEATH TWO MONTHS LATER.

Dr. L. W. Steinbach has given me permission to report the following case, which he kindly permitted me to see at the time of operation. In April, 1892, the patient, a man of twenty-five years, was caught by falling coal in a mine, sustaining a fracture in the lower dorsal region, with immediate and complete paralysis of both legs. For two months after the injury there was some blood mixed with the urine, which had to be drawn with a catheter. At the time of the operation he had control of the bladder and also of the rectum. His bowels were, however, constipated. On October 27, 1892, Dr. Steinbach operated, making a six-inch incision over the spinous processes of the lower dorsal and upper lumbar vertebræ. The laminæ and spinous processes of the eleventh and twelfth dorsal and of the first lumbar vertebræ were cut away. Upon reaching the spinal canal it was discovered that from two and a half to three inches of the cord were either destroyed or flattened against the vertebral bodies, forming a mere band within the membranes. The membranes, however, were not opened; for at the time of operation it was supposed that neither cord nor membranes remained in this area. The body of the eleventh dorsal vertebra was an irregular mass, as if fracture had taken place at this spot. The patient lost control of his bladder for a few days after the operation and had to be catheterized. He had three attacks of epistaxis. Some days later he regained control of the bladder. The wound healed promptly, but bedsores began to develop in spite of great attention. His temperature gradually began to rise and he died on December 22d. No improvement was obtained by the operation.

GOLD-FOIL IN THE SHAPE OF A CONICAL CUP INTRODUCED INTO A LACERATED CAVITY OF THE CEREBRUM FOR THE PURPOSE OF PERMANENTLY STOPPING THE OUTFLOW OF CEREBRAL TISSUE AND CLOSING A HOLE IN THE MEMBRANES.

By W. L. ESTES, A.M., M.D.,
of St. Luke's Hospital, South Bethlehem, Pa.

It occasionally happens that the exigencies of "acute surgery" bring one to the adoption of a procedure or device not recommended by the "books," but which may serve to establish new lines of practice by demonstrating an unthought-of tolerance of foreign bodies on the part of the living tissues, or suggesting similar attempts to other surgeons. Fluhrer's case of gunshot wound of the cerebrum, with successful localization of the ball by probing through the whole diameter of the brain, gave a new impetus to cerebral surgery that has led to wonderful results. The following case is therefore related as a unique example, so far as I am aware, of plugging the cerebrum *permanently*, with a most happy immediate result and complete and rapid recovery of the patient.

Cornelius B., a negro, twenty-eight years of age, was brought to the hospital in an unconscious condition on the night of April 4, 1893. The Ambulance Surgeon was told that while the patient, with a companion, was out driving, Cornelius, by what means or agency could not be discovered, was thrown to the ground and kicked by the horse, becoming immediately unconscious. He was forthwith taken in charge by his companion and sent by railroad a distance of some twenty odd miles, and finally was received at the hospital, still unconscious, three or four hours after the injury. No dressing or covering of any sort had been placed over the wound. Examination showed no injury anywhere, not even an apparent bruise, except on the right side of his head, where there was a *punched-out* sort of wound through the scalp and the bone and deep into the cranial cavity. The location of this wound was 6.5 centimeters above the external auditory meatus and 2 centimeters in front of a line perpendicular to the external auditory meatus; it was 5.5 centimeters behind and 3.5 centimeters above the external angle of the frontal bone. The wound in the scalp was round, but a laceration extended backward about 3 centimeters. The surrounding scalp was not lacerated or contused. Hemorrhage had entirely ceased and had not been profuse. The man's general condition was

good. Although he was unconscious, enough reflex remained to cause him to move about when the wound was manipulated. After shaving and carefully cleansing and disinfecting his head, he was chloroformed, the external or scalp wound was enlarged and the bone freely exposed. It was found that the depressed fracture of the bone involved an area of a little less than 2 centimeters, and that all of this bone was driven down, at almost a right angle to the cranium, into the cerebrum; so that there was a sharply-defined rim of bone, with some radiating linear fractures, and about 3 centimeters beneath, from the inner table of the cranium, the comminuted fragments lay imbedded in the cerebrum. Outside of this bone the scalp had also been punched out and the fragment was lost. The opening in the bone was enlarged and by careful manipulation the fragments were lifted out of the cerebrum with a pair of narrow forceps. A few spiculæ were so small and sharp and deeply imbedded that much care was required to locate and remove them. When the fragments were finally removed free hemorrhage took place from the cerebrum, but was checked by plugging the cavity with iodoformized gauze. Something like 15 cubic centimeters of lacerated cerebral tissue were washed away with a gentle stream of warm sterilized saline solution. The dura was lacerated to shreds and it was quite impossible to close the gap in the membrane. I concluded to pack the whole cavity with iodoformized gauze, and, by careful asepsis, endeavor to obtain healing by granulation. Accordingly, a careful dressing, with an outside pressure bandage was applied and the patient put to bed. He stood the operation very well, reacted quickly, and under morphin passed a quiet night. The next day he was quite conscious, answered questions readily, and had no paralysis. There had been considerable oozing and the dressings were saturated with blood. I changed the dressings. In spite of the greatest care there was an escape of more cerebral tissue, and as there was no membrane or scalp to help retain it I saw I should have trouble to prevent the escape of brain-tissue whenever I dressed the wound, and every prospect of a final hernia cerebri. I replugged and redressed the wound as before and concluded to wait a day or two. I recollected, in thinking over the matter, that Weir had recently used gold-foil to prevent adhesions between the dura and cranium and scalp, and had found it non-irritating, and that rapid and permanent healing occurred in his cases. My problem, however, was more complicated. I had to control the oozing of the cerebral tissue into a cavity and prevent its detachment and escape on account of a complete loss of all its envelopes. I concluded to try a sterilized cup made of heavy gold-foil fitted down into the cavity of the cerebrum.

On April 7th, two days after the injury, I again had the patient chloroformed, and getting the dimensions of the hole in the cranium I fashioned a cup from the gold-foil (which had been sterilized by immersion in a 5 per cent. solution of carbolic acid and then washed off in a warm sterilized saline solution, 0.5 per cent. solution of sodium chlorid) into the shape of a hollow cone, with the base just big enough to fit closely to the inner rim of the inner table of the cranial wound and with a depth of about 2 centimeters. The plugs were removed from the cerebral cavity, with again considerable escape of brain-matter, which was washed out by a gentle stream of the warm sterilized saline solution and the cup immediately introduced, apex downward. I fastened it in place by pressing the foil into the indentations and irregularities of the rim of the inner table and packed loosely into the cup some iodoformized gauze. I incised and loosened the scalp on either side of the wound so that I could slide it over and cover in the opening, sutured it, except a small space in the center through which an end of the bit of iodoformized gauze was allowed to project, and dressed it as before.

On April 14th the wound was redressed, the sutures removed and also the packing of gauze from the cavity of the gold cup. The wound was perfectly aseptic, the cup firmly fixed and in place, and there was no bulging and absolutely no escape of brain-matter. A small bit of gauze was again introduced into the cup to give it solidity, and the dressings were reapplied.

On April 27th the wound was again inspected. There had been no suppuration, and the wound was entirely closed except where the bit of gauze projected from the cup. This was removed and the external wound was allowed to come together. In a few days this was entirely and solidly united. The patient was allowed to be up and about. His faculties were all good, locomotion was good, and in short he showed no indication in any way of having lost any function; nor were there any signs of irritation from the cup. I kept him about two weeks, employed most of the time about the wards, doing the work of an orderly, that I might observe him and examine the seat of wound. There was absolutely no indication of any trouble or disturbance. He was discharged quite well May 20th. The wound was firmly united and there was no pulsation perceptible through the opening in the cranium.

THERAPEUTIC NOTES.

THE THERAPEUTIC USES OF THE SALTS OF CESIUM AND RUBIDIUM.

BY THEODORE W. SCHAEFER, M.D,
OF KANSAS CITY, MO.

IN the years 1860 and 1861 Bunsen and Kirchhoff, by means of their memorable four-prism spectroscope (which, by the way, was on exhibition at the recent World's Fair in Chicago), discovered the two alkali-metals, cesium and rubidium, while examining the waters of Duerkheim, Germany. Together with others, they succeeded in finding these alkali-metals in many waters, soils, plants, and in the animal system. Further spectrum observations showed even traces of rubidium and cesium in the blood of man, demonstrating the fact that they are widely diffused in Nature, although in minute quantities.

Lucanus experimented with cesium and rubidium upon the growth of plants and claimed that the latter do not absorb the salts of these metals and that they act inimically upon them, but repeated experiments in recent years have shown the fallacy of his claims. In 1864 Claude Bernard, the celebrated French physiologist, experimented with the salts of rubidium and demonstrated that they are less toxic to the cardiac apparatus than the preparations of potassium.

Cesium is the most electro-positive of the elements. Rubidium, its partner, comes next. Cesium and fluorin should be considered as chemic "ideals," because of their prominent chemic and physical characteristics. Fluorin, as I have elsewhere pointed out, is the most electro-negative member of the elements, whilst cesium is the most electro-positive. The chemic, physical, and physiologic activities of cesium and rubidium rank higher than those of potassium, sodium, or the other members of the alkali-group. The presence of cesium and rubidium in plants and in the animal organism must certainly serve a purpose. Just as fluorin, in its electro-negative functions and chemic affinities, is an inherently associated member of the halogens, so does cesium behave as a member of the alkali-metals in its chemic functions and electro-positive activity. The researches of physiologic chemistry teach that substances having allied properties must have also analogous actions upon the organism, and the difference of their modes of action can be explained on chemic principles.

My uncle, Dr. Edward Wernigk, once assistant of Prof. Bunsen, experimented as early as 1876 with cesium and rubidium upon his body. He again repeated these experiments on his own person in 1880, using cesium bitartrate. He believed that cesium and its salts acted favorably upon his heart, as he was suffering from a cardiac neurosis. It also acted favorably upon the generative organs. He assured me that the salts of rubidium and cesium possess the same therapeutic effects as the other alkali-salts. In experimenting upon his person he always took the cesium salts in smaller quantities than when he was taking the other alkali-salts internally. Thirteen years ago cesium salts were very expensive chemicals to experiment with, and as his deductions were mostly speculative he was not prepared to publish his results in scientific journals. I have an unpublished manuscript, written in 1881, in which I have noted the following in regard to cesium and rubidium:

"Since cesium appears to possess the most electro-positive character of the elements, one would rationally suppose that it might play an important function in the animal and vegetable kingdoms. So is it the case with rubidium, the next electro-positive element in rank. It is not difficult to understand that cesium and rubidium, on account of their very high electro-positive nature, probably perform the functional activities of the alkalies in a higher degree. Cesium is reputed to operate toxically upon the nerves of the heart, and the same is stated of rubidium. It is a great question if this be really true. It is more reasonable to suppose that the elements cesium and rubidium, in combination with the halogens, will perform their chemic and physical functions much more conspicuously in the system than the lower electro-positive members of the series."

Dr. Wernigk always used cesium bitartrate in small doses, beginning with ¼ of a grain and increasing to 5 grains three times daily. I have used the bromid and bitartrate of rubidium when experimenting on myself in doses of from 3 to 5 grains three times daily. I used rubidium bromid to alleviate nervous palpitation of the heart. I would have used cesium bromid, but was prevented on account of the high price of the salts of cesium.

As soon as the exorbitant market price of the salts of cesium and rubidium is reduced, there is no doubt that they will often be substituted for potassium or sodium salts. Experience will also doubtless teach that they can be given in larger doses.

Cesium is the ideal alkali-metal. It was the first element discovered by means of spectrum analysis. Chemically it is the king of the alkali-metals, being the most electro-positive member of the elements and outstripping them all in electrolytic conductivity. Metaphorically speaking, it stands with rubidium in the same relationship as gold does to silver.

ACETANILID AS A SURGICAL DRESSING.

Surgical Dispensary, German Hospital.

Service of G. A. BODAMER, M.D.

[Reported by Alfred Hand, M.D., Resident Physician]

Following the suggestion of Dr. Francis W. Harrel in The Medical News (vol. lxiii, page 438), acetanilid has been used in the Surgical Dispensary of the German Hospital as a substitute for iodoform. The results obtained have been most excellent. As stated by Dr. Harrell, acetanilid acts especially well when applied to the lacerated wounds of fingers which mechanics receive, and to which dust, oil, and foreign bodies of every description gain easy access. In the large number of cases of this description (many of which come from Baldwin's Locomotive Works), in which acetanilid was employed, not one has suppurated. Thus healing takes place in a short time, and it is often possible, without keeping the men away from work much longer, to save half of a phalanx, when amputation formerly would have been practised.

Acetanilid has also been used in all fresh wounds (except small scalp-wounds, to which pure ichthyol is applied on lint) which have come to the Dispensary in the last two months, and suppuration has occurred in but four of these: 1. An extensive incised wound of the forearm of a fat woman; it was necessary to suture a tendon and to use twenty-three sutures in closing the wound; there was so much tension that the edges of the wound sloughed afterward, although at the second dressing the wound was dry. 2. A deep, lacerated scalp-wound; there was considerable hemorrhage, and as the bleeding-points could not be readily caught, a compress, on which acetanilid had been dusted, was applied; the man came back after five days and a few drops of pus were found in the wound. 3. A deep, incised wound of the leg, with the tibialis anticus muscle severed. The antisepsis was at fault here, as the skin-wound healed, but suppuration appeared in the muscle. 4. A deep, incised wound between the thumb and metacarpus; some grease had been used as a dressing before coming to the hospital; the skin healed readily, but pus formed deep in the wound.

Some of the more important cases which were successful included a scalp-wound nine inches long, extending from the back to the front of the head; three incised wounds of the arm, with severed tendons; all of the amputations of digits, and, in fact, all of the other fresh wounds.

Simple ulcers, such as follow burns of the second degree, healed promptly without pus under acetanilid.

On chancroids acetanilid does well, at least as well as iodoform, and has the advantage, from the patient's standpoint, of being without odor. In some cases it causes pain for a few moments after being dusted on the sore, and in two cases herpetic vesicles followed its use.

Several syphilitic leg-ulcers, with profuse discharge, have dried up and healed rapidly with acetanilid, coupled with anti-syphilitic treatment. Others, however, have shown no improvement.

Dr. Bodamer has used acetanilid in his private practice, applied to mucous patches, having the patient hold the mouth open for several minutes while the powder was applied. The effect has been remarkable, the patches clearing very rapidly. He also used it in a case of ulceration of the rectum in which malignancy was feared, and prompt healing followed. In a bone-case which had persisted for some time, he secured healing by the use of acetanilid while the patient was confined to bed by an attack of influenza. In one sinus-case, the acetanilid was injected in a watery mixture, and after a few hours profuse sweating occurred, and the patient experienced a rather pleasant sensation as of floating in the air.

Acetanilid has also relieved a moist, eczematous condition, attended with the formation of crusts, around the navel of an infant a year and a half old. The condition had persisted since birth.

Acetanilid is insoluble in water, but soluble in alkalies. As its toxic effects have only followed the internal administration of excessively large doses, it is improbable that enough could be absorbed, after being dissolved in the discharges of a wound, to produce unpleasant effects, unless injected in large quantities in sinuses. In this respect iodoform and acetanilid are on a par. As a desiccant, the latter is far superior, the dryness of the wounds in all cases having been remarkable, the acetanilid being found as a thick, dry crust over the wound at the second dressing. As regards expense, acetanilid can be procured at one-tenth the cost of iodoform.

Of course acetanilid must be used much more extensively before its proper place as a surgical dressing can be determined, but from the results thus far obtained it would seem that it is a cheap, odorless, non-irritant dressing, with antiseptic, anesthetic, and strongly desiccant properties.

INSANITY CURED BY QUININ.

By EDWARD ANDERSON, M.D.,
of Rockville, Md.

Disease often manifests itself in mental derangement only, particularly when there is an hereditary predisposition to insanity. Before placing persons in asylums for the insane, we should look into their histories and carefully note every circumstance connected with their lives, both past and present. On the 11th of June, 1893, I was called to see a colored woman, between seventy-five and eighty years of age, who had suddenly become a raving maniac, tearing her bed and clothing, and inflicting injuries upon herself and everyone who came within her reach. This woman's brother was an imbecile, her sister insane, and two of her daughters had become demented and wandered off. There was no rise of temperature and no disease apparent, but thinking there might be pain in the head, I gave the woman fifteen grains of sodium salicylate three times daily, with slight benefit. I also tried my favorite remedy in such cases, hyoscyamin, but it also failed to quiet or produce sleep. I then used sulfonal, with no better success, and was obliged to resort to chloral, of which a dram a day was required to control the woman. After her children worried with her for two weeks, they determined to send her to an asylum. I knew it was very unusual for a person of her age to become mentally deranged, and remembering that before moving to Rockville she had lived on the brow of a hill overhanging a small stream, which overflowed its banks during every hard rain, I thought I would try quinin. After giving her fifteen grains three times daily for a week, her mind was perfectly restored. A relapse occurred on the 4th of September, which was at once relieved by the same remedy. Except for a slight melancholia, that comes on every other day, and which quinin or arsenic will speedily dissipate, she is as well as ever. Had this woman been young she would probably have spent the remainder of her days in an insane asylum. As malaria is almost unknown in this section, I would not ordinarily have thought of giving an anti-periodic.

PROPHYLACTIC AND GERMICIDAL TREATMENT OF DIPHTHERIA.

By C. H. HAMILTON, M.D.,
of Dubuque, Ia.

For simplicity, facility of application, and efficiency in the topical treatment of pharyngeal diphtheria, both as a prophylactic and as a germicide in developed cases, I use the following with much success:

R.—Hydrargyri biniodidi . . . gr. ij.
Sacchari albi . . . . ℥j.
Olei menthæ piperitæ . . . ♏ij.—M.

S.—Place from gr. v to x in powder every hour or two hours on the tongue or inside the lips of the child, without giving water for a few minutes afterward.

Should laryngeal or tracheo-laryngeal symptoms develop, I use, in addition to the foregoing, also with some success, unslaked lime and turpentine as follows: Place a quart of unslaked lime in a vessel of appropriate size, and pour at first upon it half an ounce of turpentine, and then enough boiling water to completely cover the lime, and place this vessel under a cotton sheet, which is thrown over the head of the nurse and infected child. A cloud of vapor will be emitted for ten minutes at each sitting, which can be repeated hourly if required for the paroxysms of difficult breathing.

A spray of hydrogen dioxid, one part to four of water, is also a great favorite with me.

The biniodid does not coagulate albumin, as does the bichlorid, and for this reason may be more efficient. Well triturated with the sugar and peppermint it is quite pleasant, and, given dry, adheres to the throat, so that the germicide is thus brought well in contact with the surface which may be, or is, infected.

A CASE OF QUININ IDIOSYNCRASY.

By JOSEPH L. HANCOCK, M.D.,
OF CHICAGO.

That small doses of quinin sulphate produce in some persons annoying symptoms, is well demonstrated in a recent case in my practice. A gentleman, a florist by occupation, twenty-six years of age, tall, with a dark complexion, and of rather slight build, was suffering from an acute "cold." The mucous membrane of the nasal passage had been discharging serum, and the general unpleasant sensations following this condition were increasing. Under like circumstances he had some time before taken quinin (two grains), but always with the results to be described.

I saw the man on the morning of December 3, 1893. While trying to attend to his business, he was feeling depressed in spirits and was about to return home in order to be quiet. An intense erythema was present, with sensations of burning and itching over the entire body, including the hands and face. These symptoms were intensified by contact with cold air. The skin of the hands and wrists showed little whitish, apparently bloodless, raised spots. The amount of quinin taken had been two grains on the previous evening; followed in a short time after by another dose of the same quantity, so that the total amount taken was four grains. The intense redness of the skin and other coincident symptoms mentioned progressed until about noon next day, dating from the time the last dose had been taken. Then a gradual subsidence took place lasting through half of the next day, leaving the patient without further serious effects.

MEDICAL PROGRESS.

Enteric Fever; Perforation: Peritonitis: Recovery.—Newton (*Chicago Medical Recorder*, vol. v, No. 6, p. 409) has reported the case of a lad, seventeen years old, who came under observation on the third day after having taken to his bed, with diarrhea, tympanites, and pain in the right iliac fossa. The temperature was elevated and rose-spots were present upon the abdomen. Restriction of the diet to milk and beef-tea, and the administration of a mineral acid and pepsin, and bismuth, salol, opium, were followed by amelioration in the symptoms. On the seventh day, however, the temperature again rose, the pulse became accelerated, small and thready, the face pinched, the skin cold and clammy, the tongue dry, and the abdomen tympanitic and extremely sensitive. It was learned that during the previous night, while a movement of the bowels was taking place, sharp, acute pain was felt in the side. Perforation of the bowel was diagnosticated, and celiotomy advised but not acquiesced in. Morphin, strychnin, and whiskey were repeatedly administered, and by the following day the patient had rallied somewhat. He remained in a precarious condition for several days, when he gradually began to gain ground. For the succeeding three weeks the temperature pursued an irregular course and the diarrhea was particularly obstinate. After the lapse of another week indications of the presence of an abscess between the anus and the scrotum appeared, and three ounces of fetid pus were evacuated. Through the opening made a probe could be introduced into the abdominal cavity for a distance of ten inches. The opening was kept patulous by means of gauze, which was removed after the lapse of twelve days, and the external wound was permitted to heal. From a few days after the occurrence of the supposed perforation complaint was made of a particularly sore spot, about three inches in circumference, below and a little to the left of the umbilicus, and over which percussion yielded a dull note. It is believed that the spot indicated the situation of the local peritonitis that existed, and which remained local from the formation of intestinal adhesions as a result of the exudation of plastic lymph. As peculiar features of the case are pointed out the early date of the occurrence of perforation, the situation in which the abscess pointed, the failure of the temperature to decline, and the absence of vomiting.

Ingrowing Hairs.—Guthrie (*Practitioner*, No. 307, vol. lii, p. 19) calls attention to a condition of ingrowing hairs, which presents itself in the form of bluish-white pimples, varying in size from a pin's head to a small pea, situated usually about the chin where the beard grows the thickest. Careful inspection of the unshaved chin and cheeks will show here and there the presence of "giant hairs." These are dark in color, and as thick as hog's bristles. The slightest traction with forceps suffices to painlessly remove them. The thickening is due to the deposit of a dark, soft material, which envelops the hair throughout its extent. This layer can be scraped off, and is soluble in liquor potassæ. The hair itself is also thickened, aad its structure is blurred and indistinct. It is probable that the little bluish-white pimples form by the growing within the hair-follicle of what remains of a broken, thickened, and brittle hair. The condition occurs most commonly on the bearded face, but it is sometimes observed in other situations, as the axilla, the pubes, the periphery of the hairy scalp. Under the latter circumstances the condition is dependent rather on a blockage of the orifice of the hair-follicle than upon disease of the hair itself. Sometimes, instead of a single hair, such a follicle will contain a minute ring-shaped tress, composed of a dozen or more fine hairs. These are particularly common about the under surface of the penis, where they often suppurate and discharge a foul-smelling mixture of pus and decayed sebaceous matter. In treatment giant hairs should be removed by means of forceps, but it is essential that no force be used. When the little nodules have formed, the overlying surface should be sterilized and an incision made with a sharp tenotomy knife. A portion of hair will present, and can easily be extracted.

The Knee-jerk in Diabetes Mellitus.—Among 131 cases of diabetes mellitus Grübl (*Neurolog. Centralbl.; Wiener med. Presse*, No. 2, 1894, p. 66) found the knee-jerks normal in 113, and exaggerated in 5. Three of the latter, however, presented not true diabetes, but merely the glycosuria of neurasthenia, and in them both the presence of sugar in the urine and the state of the reflexes were to be ascribed to the condition of the nervous system. Among the other 115 cases were nine of the severe type of diabetes mellitus. Of these nine the knee-jerks were exaggerated in two, which pre-

sented great weakness and in which the urine contained large amounts of sugar and acetone, but in which, as in the course of treatment, the general condition improved, the excitability diminished, and ultimately the knee-jerks became normal. In four cases of severe diabetes the knee-jerks were abolished, or greatly enfeebled. The knee-jerks were also wanting in nine mild cases, but in two of these posterior spinal sclerosis coexisted, and in a third there was such an excess of adipose tissue as to interfere mechanically with the elicitation of the phenomenon. The knee-jerks were thus lost in ten cases among 131—7.6 per cent. It was further found that the knee-jerks may be preserved in the most severe cases, even in the presence of coma, while they may be absent in mild cases in which the sugar can be made to disappear by appropriate diet. It thus appears that symptomatically the knee-jerks have little or no significance, either diagnostically or prognostically.

The Surgical Treatment of Pulmonary Cavities.—From a study of the present aspect of the surgery of the lungs, Dandridge (*Annals of Surgery*, vol. xix, No. 2, p. 129) concludes that a certain number of pulmonary cavities can be successfully dealt with by incision and drainage. Tuberculous cavities in the lower portion of the lungs, if single and superficial, and if the general condition of the patient permits, should always be opened. Cavities at the apex should only be opened when there is free and persistent fetid expectoration that has resisted treatment, and the remainder of the lung is not involved. Abscess, gangrene, and hydatid cyst should be opened and drained whenever they can be located. Closure of the pleura should be insured before the evacuation of a cavity is attempted. In cases of pyo-pneumothorax the fistulous track should be explored, and any cavity freely laid open by means of the cautery. Cavities that have been opened are best treated by packing with gauze, preferably impregnated with iodoform. The further careful trial of such agents as iodoform, chlorin-gas, and zinc chlorid is desirable to determine whether or not the tuberculous infiltration may be modified by them. It is also desirable, for the further extension of surgical interference in pulmonary cavities, that the means of locating such cavities and of determining their size and the exact character of the tissue that overlies them should be perfected by further study, and for the accomplishment of this the surgeon must look to the physician.

Stonemason's Neurosis.—Frere (*British Medical Journal*, No. 1726, p. 188) has reported the case of a stonemason, forty-five years old, who was compelled to give up his work on account of tremor of the left hand, with inability "to govern his chisel." The grasp of this hand was found to be distinctly enfeebled. The hand was steady in most positions, but as soon as an attempt was made to grasp the chisel, as if at work, there was set up an incontrollable shaking of the hand. There was no wasting and no painful points. General and special sensibility was preserved, and ophthalmoscopic examination revealed no abnormality. The man complained that when at work the chisel "would dance in his hand." Cramp was noted on only three occasions, each time confined to the little figer, probably because at times the chisel was grasped with the little and ring fingers only. These attacks were of brief duration. Pain, progressive in character, had appeared as follows: in the carpal joint of the thumb, which felt "as if it were broken;" between the metacarpo-phalangeal joints of the first and second fingers; at about the center of the forearm, on the radial aspect; at the center of the upper portion of the forearm, on the anterior aspect; at the shoulder along the tendon of the biceps. The pain in the forearm was at times so intense as to prevent grasping with the thumb or the first and second fingers; at such times these digits would be extended and the chisel grasped with the little and ring fingers. Marked improvement followed rest, massage, and small doses of arsenic.

A Pen and Holder Swallowed.—Plant (*Archives of Pediatrics*, vol. xi, No. 2, p. 141) has reported the case of a fifteen-year-old boy, of limited intelligence, who, after complaining for some days of pain in moving about and in sitting down, told his mother that a week before he had swallowed a pen and holder. A diet of mush and milk, together with castor-oil, was ordered, but proving of no avail, celiotomy was undertaken. The instrument was found and removed without difficulty. It was an ordinary wooden holder, stained red, about six inches long, and had a steel pen attached which pointed downward. It had been carried in the stomach and intestines for about ten days. The boy made a good and uneventful recovery.

THERAPEUTIC NOTES.

The Treatment of Empyema in Childhood.—At a recent meeting of the Medical Society of Hamburg, Schütz (*Therapeutische Monatshefte*, J. 8, H. 2, p. 76) related that of eighteen cases of empyema in children treated by resection of one or more ribs, recovery ensued in all but two, and these were in children under one year of age. The prognosis of operation at this period of life is not favorable, but siphonage is not applicable. The drainage-tube, of considerable size, was permitted to remain, on an average, twenty-four days; the wound had healed in the course of an average period of forty-two days. Operation was undertaken as soon as the diagnosis was made, as the mortality of expectant treatment had been 80 per cent. Left-sided empyemata are particularly dangerous on account of the liability to the development of pericarditis. The resection was made as near as possible to the vertebral column. After the section of rib has been removed the pleural cavity was irrigated with a warm solution of boric acid, intended for the removal of the purulent contents rather than for disinfection. More active disinfectants, such as carbolic acid, are to be avoided on account of the risk of intoxication. Siphonage is not practically applicable in the case of young children on account of the liability of the tube to slip out of place. The operation was invariably well borne.

For Recent Ringworm.—

R.—Thymol. . . . . ℥ss.
Chloroformi . . . . . ℥ij.
Olei olivæ . . . . ad f℥j.—M.
Ft. applicatio.
S.—Apply topically night and morning.

Practitioner, No. 308.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, MARCH 10, 1894.

THE PRESENT STATUS OF OUR KNOWLEDGE OF BACTERIOLOGY.

THE philosophizing bacteriologist must realize that, in its present development, his science is in an unsatisfactory condition. This view was well expressed in a recent conversation, by a biologist who has devoted much attention to bacteriology, when he compared the bacteriology of to-day with biology before the promulgation of the law of variation. Then the zoölogist confined his study to "typical" animals, ignoring the varieties. So, also, we now speak of "typical" bacteria, of "typical" cultures, of "typical" effects, and we tend to remain in ignorance of the varieties, simply because, in our present knowledge, we have no underlying law which can account for the variations and make them interesting. A few examples will illustrate this point; although, in point of fact, scarcely a page of bacteriology fails to furnish ground for this criticism.

The working bacteriologist meets with curious phenomena almost every day of his practice. Something inexplicable happens to an apparently familiar culture, and it takes on new properties. The morphology of a given bacterium seems to be of an established constancy, until suddenly, and for some unknown reason, it takes on a strange form. One day a certain species of bacilli will show those striking irregularities of morphology known as "involution-forms"; on another day they will appear plump and regular. Certain of these conditions we look upon as typical; the rest, as mere variations.

For lack of a better basis of classification, the pathologist is accustomed to divide bacteria into two classes, pathogenic and non-pathogenic. This division was, to within a very short time, considered quite adequate for practical purposes. In the light of the latest investigations, however, we are forced to conclude that even the pathogenesis of a given bacterium is extremely variable. We are shocked to behold microbes, hitherto considered absolutely harmless, suddenly assume active pathogenic properties. The diphtheria-bacillus is said to exist in two varieties, a pathogenic and a non-pathogenic form. The testimony of competent bacteriologists is to the effect that these two varieties of the diphtheria-bacillus cannot be differentiated by their morphologic and cultural peculiarities,[1] and that the distinction can only be absolutely made by inoculation of susceptible animals. The pathogenic variety of the diphtheria-bacillus is found only in the membrane of true diphtheria; but the non-pathogenic variety is found in various benign throat affections, and in the *throats of apparently healthy individuals*. Here, then, variation plays an all-important and very suggestive rôle.

Under the name *Streptococcus pyogenes*, we find at least two distinct varieties of pyogenic cocci, which are indistinguishable in culture and in microscopic preparations. Inoculated upon the skin of man, one variety of this organism produces only a circumscribed and fleeting reaction; the other produces a widespread erysipelatous inflammation. As an instance of an indifferently pathogenic microbe becoming highly septic, we may cite the rapidly-accumulating evidence against the *Bacillus coli communis*. Not only is this bacillus frequently found as the sole inhabitant of various peritoneal exudates, but it is also found in pure culture in several other inflammatory affections, in which it must surely have gained access from without the body. From the observations of MOORE (U. S. Department of Agri-

[1] Escherich (Berliner klinische Wochenschrift, 1893, Nos. 21–23), in an exhaustive study of this subject, endeavors to furnish some specific differential culture-tests for the true and pseudo-diphtheria-bacilli. The delicacy of these reactions, however, only serves to illustrate the difficulties which beset this work, and to indicate the necessity of much further study.

culture, Bureau of Animal Industry, Bulletin No. 3, 1893, p. 45), we learn that cultures of *Bacillus fluorescens liquefaciens* suddenly took on septic properties, and that a rabbit inoculated with 0.10 c.c. of a bouillon-culture died in seven days. *After three weeks, the cultures lost their pathogenic qualities.* This bacillus has been cultivated in the laboratories of many bacteriologists through many generations, and this is the first suspicion which has ever been cast upon its constantly recognized benign character.

Considering the apparent simplicity of structure of these minute organisms the absence of a well-formulated theory to interpret the wide variation in their morphology and physiology is extremely perplexing. The controversy waging upon the identity of the *Bacillus coli communis* and the *Bacillus typhi abdominalis* illustrates this point. Certain structural features, as the tendency to form long threads, and the characteristic flagella, are said to distinguish the typhoid-bacillus from the colon-bacillus. But colon-bacilli are sometimes observed growing into threads, under certain conditions; and MOORE (*Wilder Quarter Century Book*, 1893) has shown that, as regards the flagella, it is impossible to distinguish *B. choleræ suis*, *B. coli communis*, and *B. typhi abdominalis*. Then as regards their physiology, typhoid-bacilli are said to be actively motile, while the colon-bacilli possess but slight motility. But in old cultures of each of these organisms, no difference can be detected in the motility of individual bacilli. The property of inducing fermentation in glucose-solutions, with the production of gas, and of producing indol in beef-peptone solution, has been regarded as distinctively characteristic of *B. coli communis*. A French observer, however, comes forward and claims that, by growing *B. typhi abdominalis* under new conditions, it may also be induced to give rise to fermentation and to the indol-reaction. Moreover, between what we may regard as "typical" colon-bacilli on the one hand, and "typical" typhoid-bacilli on the other, there is a whole series of intestinal bacilli, known under various names, and described by various bacteriologists, which represents a very perfect gradation from the one typical microbe to the other. Are these intermediate varieties to be regarded as transition forms? And is *B. typhi abdominalis* to be regarded as nothing more than a modified variety of the ever-present *B. coli communis?*

Problems such as these haunt the bacteriologist's daily work, and convince him that he has but mastered the alphabet of his wonderful science. While we are ready, then, to give to bacteriology its full share of credit, we must not forget that its very youth largely explains its manifest shortcomings.

THE TREATMENT OF LATERAL CURVATURE OF THE SPINE.

FROM time to time there are, in medicine, as in the allied sciences, periods of inactivity, during which the profession, surfeited with the pleasure of some new discovery, languidly rests upon its laurels before entering upon another conquest. The present appears to be such a season in the history of orthopedic surgery. The impetus given by subcutaneous tenotomy, antiseptic osteotomy, forcible manual and mechanical restoration, resulted in a certainty of cure in club-foot never before attained. Since these innovations no decided advance in any department of orthopedic surgery has been made; but generous discussion upon the etiology, pathology, and treatment of lateral curvature of the spine has resulted in greater uniformity of view, and manifests a tendency to lead to some definite conclusion in regard to the prevention and correction of this unsightly deformity.

The obstacles that have hitherto prevented the earlier solution of these problems have been the want of literary research, anatomic investigation, the application of mechanical therapy, and the desire of each orthopedist to credit himself with the application of a new principle or the invention of a new apparatus. This status of affairs is well illustrated in a recent contribution by BIDDER (*Deutsche medicinische Wochenschrift*, 1893, No. 52, p. 1378), who describes as "meine elastische Pelotten-bandage" what is, in principle, BARWELL'S elastic apparatus.

The difficulty with the modern orthopedist in regard to scoliosis has been in receiving so much material at second-hand, without sufficient research. In no department are original articles so valuable as in orthopedic surgery, as apparatus must be described as well as illustrated; abridged descriptions are often worthless, and reproduced illustrations lose much in the reproduction. The earlier writers, as COPELAND (1815), SHELDRAKE (1816), BAMFIELD (1824), SHAW (1827), COULSON (1839), TAMPLIN (1846), and LONSDALE (1857), were very thorough in their clinical observation, and recorded much that if

carefully studied by the modern orthopedist would enable him to avoid absurd repetition. Many of the methods of treatment and the roughly-constructed apparatus were the result of a false pathology. The abandonment of tenotomy in lateral curvature by that prince of tenotomists, JULES GUERIN, and also by his contemporary, PROF. LEWIS H. SAYRE, was an advance in the right direction. The removal of the cumbersome and injurious supports constructed after, but not improvements upon, the pattern of SHAW, was also an advance, and to-day the modern orthopedist has reached a position but slightly in advance of LONSDALE in the pathology and treatment of scoliosis. Ordinary habitual scoliosis may best be considered in three classes, according as the degree of the affection is mild, moderate, or severe.

These three degrees likewise indicate the prognosis, for a positive cure may be promised in the mild cases, great improvement and possible cure in the moderate cases, and little improvement and but slight amelioration in the severe cases.

The treatment of the mild forms is now a completed chapter, the modern innovations and modifications of the gymnastic methods being but fanciful changes of nomenclature and efforts at self-advertisement.

The prosthetic improvement of the incurable cases may be left to the judgment of the surgeon, the skill of the mantua-maker, or the fancy of the afflicted individual.

The treatment of the medium cases is the "bone of contention" for modern orthopedic discussion and experimentation. It is in these cases that the question of the treatment by means of pressure-correction comes up for consideration. In these, mechanical appliances are proposed and employed to forcibly stretch the contracted curves, the force being gradually increased and repeatedly applied. Two forms of correcting appliances have been employed: (1) those placing the trunk in correcting attitudes, and (2) those designed to exert direct correcting pressure, and BEELY, LORENZ, HOFFA, REDARD, and BRADFORD and BRACKETT have shown that a great amount of force can be employed without injury, and that practical results can be obtained in this manner.

These methods are yet upon trial, but they indicate an advance which promises to render possible the cure of all of the moderate cases and the improvement of some of the severer forms. They are, however, applicable only to the neglected forms of hospital cases, for, if properly treated, scoliosis in private practice but seldom reaches these severer forms.

The subject of forcible correction of scoliosis should be looked upon as modern surgeons look upon resections of the major articulations, especially the hip-joint—as a *dernier ressort*.

MR. HOLMES summed up his remarks upon the excision of the hip "by the statement that it ought to be very rarely indeed required, if the diease were treated properly at its commencement." The same statement applies with greater emphasis to the forcible mechanical correction of scoliosis, and we may add that it ought *never* to be required if the disease be properly treated at its commencement.

REFORMS IN THE TREATMENT OF THE INSANE.

THOUGH great advances have been made in our knowledge of the etiology, nature, and recognition of the various forms of insanity, a corresponding improvement has not been effected in our modes of management and methods of treatment of the insane. The causes of this disparity may be traced largely to the older, false conceptions of insanity and the enactment of complicated laws providing for the incarceration of its unfortunate victims.

In a paper read at the International Congress of Charities, Correction, and Philanthropy (Section IV, on the Commitment, Detention, Care, and Treatment of the Insane) held in Chicago in June last, DR. STEPHEN SMITH (*American Journal of Insanity*, vol. l, No. 3, p. 325), who for six years was Commissioner on Lunacy for the State of New York, made an eloquent and philosophic plea for a revision of existing laws appertaining to the disposition of the insane. He pointed out that these laws are but elaborations of ancient laws, unmodified by the advances that have been made in knowledge concerning the nature and treatment of insanity.

The insane person is almost universally treated as if he were criminal, as one dangerous to the welfare of society, and not, as he properly should be, as a sick person.

In many States the physician plays but a subordinate part in the determination of the existence or non-existence of insanity and in the disposition of the case, while in some the entire matter is decided by persons wholly without medical training. As a natural outcome of such a course of procedure the

treatment is conducted upon an expectant basis rather than from an aggressive standpoint. Too often the institution for the care of the insane is looked upon as an asylum rather than as a hospital. Modern investigation, however, has shown that insanity is but a manifestation of cerebral disease, and that its victims are sick, just as the victims of disease of the lungs or other organs or structures are sick, and that the one, like the other, requires medical care and observation in order to restoration to health; or, if incurable, that life may be made as comfortable and as useful as possible.

The question of depriving an insane person of liberty should be decided upon the same lines that are pursued in the determination of the isolation of a case of contagious disease, *i. e.*, the danger to the individual and to the community, and the ability or the inability of the friends of the patient to make the necessary provision. As cases of insanity usually first come under the observation and care of the family physician, he should be authorized to issue certificates of insanity, to continue in force for a brief and limited period of time. In case it be deemed necessary for the welfare and safety of the patient and others that he be placed under the care and treatment of a hospital for the insane, this certificate should be transmitted to the appropriate hospital-official, whose duty it should be to detail a medical officer to make a personal examination and such inquiry as may seem necessary to confirm or correct the opinion of the first examiner. In the discretion of this officer the patient may be removed to a hospital, where within twenty-four hours another examination is made and the previous findings verified or revised. The certificate thus properly approved and indorsed should, within a short time, be forwarded to a Committee on Lunacy of the State Board of Charities.

In order to remove the impression that hospitals for the insane are custodial rather than curative in aim, radical changes in both the construction and the management of such institutions will be necessary. More, of course, can be accomplished in this direction in the newer States than in the older, but even in the latter existing conditions can be favorably modified, and in the erection of new buildings the reforms contemplated can be made effective.

It is desirable that patients be classified (1) according to sex; (2) according to the nature of their disease; (3) according to the stage of their disease; and that there should be (4) a department for convalescents and (5) one for incurables. Where practicable a cottage-plan of organization would perhaps be the best, provision being made for accessory features, such as a school, a place of amusement, opportunities for engaging in industrial and agricultural pursuits. The superintendent of such an institution would have to be a throughly equipped medical man, specially qualified by education and experience. The care and treatment of the cases should be placed in the hands of attending physicians, who should have had at least one year's experience in the hospital treatment of the insane, and of whom there should be at least one for every hundred curable patients. The immediate care of the patients should be intrusted to first and second assistant physicians, who should be selected from recent graduates and receive adequate compensation, and of whom also there should be one to every hundred acute cases. The following departments would seem essential: a reception ward or hospital; a department for acute cases; a department for convalescents; a department for incurables.

The propositions embodied in the several recommendations of DR. SMITH seem so thoroughly rational and so humane, and the results to be reached of such great importance, that we earnestly urge their early acceptance and enforcement.

EDITORIAL COMMENTS.

The Seminal Fluid of Tuberculous Patients.—Numerous observations have been made upon the seminal fluid of persons suffering with some form of tuberculosis, with results that have been rather contradictory. A recent study by SPANO (*Gazetta degli Ospitali*, November 11, 1893, p. 1418; *Revue de la Tuberculose*, 1893, No. 4, p. 322) would seem to demonstrate conclusively the infectiveness of seminal fluid from cases of pulmonary tuberculosis, even when the genito-urinary tract is uninvolved. The investigation included eight cases—six of pulmonary tuberculosis and two of tuberculous arthritis. In the former and in one of the latter the spermatic fluid was obtained from the seminal vesicles after death, under appropriate antiseptic precautions. In the remaining one the fluid was obtained in the course of an ordinary emission. To exclude the possibility of the existence of a beginning tuberculosis of the genito-urinary tract that might escape macroscopic observation, histologic examinations were made in all of the fatal cases. In all of the cases cover-glass preparations were made and stained by approved methods. In three, tubercle-bacilli were readily detected; in five, not at all; in one, bacilli were found only after the fluid had been treated with caustic soda and boiled, the supernatant fluid being decanted. Intra-peritoneal injection

of a portion of the fluid was practised in seven cases, with success in five. Vaginal inoculation was practised in four instances, with success in two. Cultivation-experiments were undertaken in six instances, with success in three. In neither of the two cases of tuberculous arthritis was the seminal fluid infective. While the number of observations is perhaps too small to warrant ultimate conclusions, the results are, to say the least, extremely suggestive.

The Morality and the English are Much Alike.—The following letter was recently received by a general physician of Philadelphia from an optician:

Respected Sir: Mr. —— —— —— is a practical optician of 34 years standing and 16 years with —— —— —— and their foreman; would like to make arrangements with you to send as many of your patients as you can, and in order to make it pay you I will allow you 25 per cent of the gross receipts of your patients; in order to make this arrangement I will offer you a few suggestions. When you have a patient before you who complains of headache or any trouble with the eyes or glasses, or if you observe that they cannot see as well as they should with the glasses they are using, or if they do not wear glasses, recommend them to me at once to see if I cannot give them something better. Give them my introduction card and tell them by showing this I will as a personal favor to you make an examination of their eyes without any charge. You will be surprised how many patients you will send and the amount of commission that will be to your order at the end of a month, besides having your patients come back to you for other treatment. If you send your patients to a prescribing oculist you will probably never see them again as they would prefer the oculist to treat them for everything while I only examine the eyes for glasses.

—— —— —— —— will wait on you to-morrow during your office hours. Your perusal, patronage and co-operation respectfully solicited.

—— —— ——

SELECTION.

THE TERMS "INFECTIOUS" AND "CONTAGIOUS."

The word "infection" has been and is still used in various senses.

1. By some writers it is used, in distinction from contagion, to indicate the transmission of disease without personal contact, as through the air and infected things, not persons. This usage, once common in medical writings and still popular, is dying out among physicians and is no longer supported by the best medical authorities.

2. According to another usage, infection refers primarily to a diseased condition characterized by certain symptoms and lesions, and only secondarily or not at all to the nature and mode of transmission of the morbific agents causing the disease. The etymology of the word—from *inficere*, to taint, to spoil—seems to justify this meaning, but there enters also into the etymological sense the conception of something introduced from without. The morbific agents capable of producing infection in this sense are heterogeneous, and not easily classified, including many, but not all, pathogenic bacteria; some, but not all, pathogenic fungi; some, but not all, pathogenic protozoa; a few parasitic worms, notably trichinæ; some, but not all, toxic bacterial products; some poisons produced by other vegetable cells, as abrin and ricin; and some poisons produced by animal cells, as snake-venom. These poisons, produced by vegetable and animal cells, belong mainly to those called ptomains, leukomains, and toxic proteids. It will be observed that this second definition of infection is essentially clinical. This use is not common, and is not to be recommended.

3. Modern investigations have shown that the most common and typical infectious diseases, according to any signification of the term infectious, are caused by the invasion and multiplication of pathogenic microorganisms; and it is now customary, at least among bacteriologists, hygienists, and pathologists, to limit the term infection to the morbid condition caused by the entrance and growth within the body of pathogenic microörganisms, and to the act or process by which disease is thus caused. Infection in this sense refers to the nature of the morbific agents causing disease, and implies nothing as to the mode of transmission of these agents. The pathogenic microörganisms which we now know to be concerned in causing infections belong to the classes bacteria, fungi, and protozoa, but we know nothing about the specific agents of infection in many, and these among the most typical, infectious diseases, such as exanthematous fevers. Infectious diseases, as thus defined, form a tolerably definite and well-recognized group of affections.[1] An infectious disease may be localized or general.

According to this third definition, which is the one followed in the present article, infections are distinguished from intoxications. Poisoning with bacterial products plays the chief rôle in producing the phenomena of an infectious disease, and it is impossible to draw any sharp dividing line between intoxication and infection, but it is believed to conduce to precision and clearness to regard as agents of infection only such as are capable of reproduction—that is, such as are living organisms—and not to include among these agents chemical poisons, whether produced by bacteria or other vegetable cells or by animal cells.[2]

[1] The not very happy term, at least in its English dress, "invasive diseases" (Invasionskrankheiten), has been employed to designate other parasitic diseases, particularly those caused by entozoa. One is certainly reluctant to exclude trichinosis from the list of infectious diseases, as well as to admit to the list most of the diseases produced in human beings by fungi, such as thrush and the dermatomycoses. This reluctance is due to the fact that we cannot well abandon the conception that infection implies a permeation of the body with microörganisms or their products, such as we generally observe in bacterial diseases. If, however, we take a broad view of the relation of fungi to diseases of some of the lower animals, and especially to plant-diseases, we can hardly fail to include pathogenic fungi among infectious organisms.

[2] The difficulties which arise if we include, as is sometimes done, among infectious diseases simple intoxication with bacterial products without the entrance and multiplication of the causative bacteria within the body, are numerous. The bacteria concerned in the not unimportant group of affections caused by the reception of ptomains and some other bacterial products formed outside of the body, as in poisoning from decomposing meat, fish, milk, etc., are mostly strict saprophytes, incapable of parasitic growth in the body of the infected animal. It is only cer-

The old terms contagion, miasm, and miasmatic contagion no longer answer the purpose of modern medicine, but it is necessary to give the student some idea of the meaning attached to them.

A contagious disease is one capable of communication from one individual to another by means of direct or mediate contact. The introduction of the expression mediate contact in this definition is necessary, but it greatly lessens its precision. In ordinary use the epithet contagious is applied only to those diseases which are readily communicable from individual to individual, so that a person affected with the disease is a source of danger to those in proximity to him. When the infectious agent is eliminated from the diseased body only in such a way, as by the feces, that it is not likely to be directly received by a second individual, but takes a roundabout way, as through the ground and water, to reach another individual, then the disease is not usually called contagious, although under certain circumstances it may be so. Typhoid fever and Asiatic cholera are examples of such diseases.

It is evident that the term infectious diseases is a more comprehensive one than contagious diseases, and is not strictly comparable with the latter, as the former refers to the nature of the agents causing the disease, and the latter to the manner of transmission of these agents from individual to individual. It is also clear that the limits of what shall be called contagion are indefinite and arbitrary. It is not uncommon to speak of any infectious agent as a contagium. Whether or not an infectious disease is contagious in the ordinary sense depends upon the nature of the infectious agent, and especially upon the manner of its elimination from and reception by the body.

Most, but not all, contagious diseases are infectious. Scabies is a contagious disease, but it is not infectious.

A miasmatic disease is one caused by an ectogenous infectious agent, neither directly nor indirectly derived from another case of the same disease. The type of a miasmatic disease in the sense defined is malaria or the malarial diseases. The cause of malaria is a protozoön, which multiplies within the body, but, so far as we know, is never eliminated from the body in a living state capable of infecting another individual or the locality. The term miasm is sometimes used in a loose sense to designate infectious agents coming from the water or the ground, especially when believed to be conveyed by the air, or even to designate noxious gaseous emanations and undefined effluvia from the ground.

The expression miasmatic-contagious diseases was introduced in order to explain the often complicated, and even yet not thoroughly understood, modes of spread of Asiatic cholera and typhoid fever, and especially to this group was attached a variety of hypotheses, now for the most part overthrown, and which it is not necessary here to mention. In this group of so-called miasmatic-contagious diseases the infectious agent is eliminated from the diseased body in the living state, but in such a way that it is not likely to be directly received by a second individual; and to produce a second infection it must take ordinarily a path, often circuitous and tortuous, and not always easily traced, through various external media. This transit may be influenced, in ways which we now only imperfectly understand, by different meteorological and telluric agencies.—Dr. Wm. H. Welch, in *Pepper's Text-book of the Theory and Practice of Medicine*, vol. ii.

tain poisonous products of bacteria which anyone would think of considering as infectious agents, and it would not be easy to define which toxic product should be admitted to the group and which excluded. If we admit as infectious agents toxic products of the bacterial cell, there is no reason why we should exclude similar chemical substances, particularly the toxic albumoses, produced by other vegetable cells and by certain animal cells. Poisoning by snake-venom is clinically a typical infection, and is so regarded by Virchow and others, who adopt a clinical rather than an etiological meaning of the word "infection."

If there were any chance, as there is not, of the word "infection" disappearing from medical nomenclature or from popular use, or if there were any good substitute for this word, it would probably not be worth while to try to adapt this old term to our modern conceptions, based upon a more exact knowledge of the causation of disease, and it might be left to the vague and loose meaning which has always attached to it in the minds of the people.

CORRESPONDENCE.

LONDON LETTER.

(From our Special Correspondent.)

The Pulse in Diabetes and the Treatment of Diabetes—Trephining for Hemorrhage in Brain-compression after Injury—Subphrenic Pyo-pneumothorax—A Test of Dr. Brown-Séquard's Orchitic Fluid—A Peculiar Form of Paralytic Dementia.

Dr. Saundby draws attention to the prognostic significance of the pulse in diabetes. The presence of excess of sugar in the blood is productive of sufficient obstruction to the circulation to cause an increase in the intra-arterial tension so long as the heart acts with normal vigor, but as the disease progresses nutritional changes are apt to affect the muscular structure of the heart, and with their development the pulse becomes feeble and easily compressible, thereby becoming an index of the wasting heart and a prognostic sign of most unfavorable augury. Speaking empirically, loss of knee-jerks is also found to be a sign of bad omen.

In regard to treatment, Dr. Saundby insists that the first thing to do is to find out the influence of a complete non-starchy, non-saccharine anti-diabetic diet, one, that is to say, consisting of meat, eggs, fish, jelly, almond biscuits, and cakes, tea or coffee, and mineral water. This is difficult to put up with for long, but it can be borne for a few days, and a few days will tell how far the glycosuria is dependent on the carbohydrates taken as food, and how far, therefore, it is worth while pushing dietetic treatment; for it is most undesirable to keep diabetics who are losing flesh and strength on too strict a diet, and Dr. Saundby goes so far as to say that every diabetic should be allowed as much carbohydrates as he is able to *assimilate*, estimating this by the amount of urine and sugar and the body-weight. A pint of milk and two or three large potatoes daily may often be added to the diet with very little increase of the glycosuria and with great benefit to the patient. Green vegetables, sea-kale, celery, salad, cream, cream-cheese, cheese, isinglass, blanc-mange, and

Irish and Iceland moss are aids to diabetic cookery. Irish moss is a very useful article, supplying a basis for puddings of which a great deal can be made by a good cook. Carbohydrates can also be given to diabetics in the form of levulose, or left-handed sugar, to the extent of one and one-half ounces daily, divided into three doses. It cannot be given in sufficient quantity to constitute an important nutriment, but it is most grateful to many patients, and it is one way of giving the quantum of carbohydrate, which, after all, is essential to even a diabetic's welfare. At least once a week a note should be taken of the body-weight, the total daily urine, and the total daily sugar, for if carbohydrates are given their effects must be carefully watched. Tea or coffee sweetened with saccharin or levulose may be drunk, or Bordeaux claret, or whiskey, or unsweetened gin, not exceeding four ounces a day and well diluted, or even in some cases a little bitter ale.

Two cases recorded by Mr. Littlewood, of Leeds, show the importance of considering carefully the desirability of seeking for internal hemorrhage whenever an injury in the region of the middle meningeal artery is followed by symptoms of compression. In the one case he trephined in the Rolandic region and found large clots, with free hemorrhage going on. The trephine used was a large one, but more bone was rapidly removed by Hoffman's forceps in the direction of the anterior inferior angle of the parietal bone, and on turning out the clot a torn vessel in the dura mater was exposed and was with some difficulty secured. For three days the patient improved and became able to answer questions, but he died five days after the operation. At the *post-mortem* an extensive fracture was found, together with suppurative meningitis. In another case, which died four and a half hours after the injury and in which nothing was done, the *post-mortem* showed a depressed fracture and a large clot (a teacupful) between the bone and the dura mater. No tearing or laceration of the brain could be discovered and the other organs appeared healthy. A laceration of the trunk of the middle meningeal artery was found very near the foramen spinosum. It is clear that in all *post-mortem* examinations of cases of this nature, care should be taken to discover and record the position of the bleeding-point as a guide to surgeons who may operate in similar accidents. It is also clear, however, that in any operative procedure for the control of meningeal hemorrhage the surgeon must be prepared to go far down, even to the foramen spinosum, and that he must be armed with means, such as a curved needle, for passing a ligature under the artery in this position. The difficulties of such an operation must be very considerable, and if, on exploration, it became clear that the hemorrhage came from low down, it possibly would be the simpler and safer plan to proceed at once to the ligature of the external carotid.

Dr. Lee Dickinson draws attention to the condition known as subphrenic pyo-pneumothorax, of which he details two cases and tabulates twenty-three others from the *post-mortem* records of St. George's Hospital. The causes of this condition are perforations from various lesions of air-containing viscera; although often well marked, the signs do not extend to the summit of the thorax, where normal phenomena are found to persist; the heart, moreover, is displaced far less than in true pneumothorax. It need hardly be added that these cases are very fatal. The previous existence of dyspeptic symptoms, together with a distribution of the physical signs somewhat different from those in true pneumothorax, should make one suspicious. The physical signs are such as amphoric breathing, metallic tinkling, and bell-note. Early in the history of the case there is often but little to raise the suspicion that the disease has an abdominal origin, except the fact of the onset of the symptoms having been preceded by sharp abdominal pain. The diagnosis is not especially embarrassing, but cases occur in which the signs observable are principally thoracic. It would appear that in most cases, before the end, the diaphragm becomes perforated, and a true pyo-pneumothorax results. When this takes place, the stomach, the duodenum, or other parts of the intestines may be affected, but by far the most frequent perforations are from simple gastric or duodenal ulcers. With the resulting abscess tympanitic resonance projects toward and partly occupies the abdomen at the same time that it produces physical signs within the chest.

A careful test has lately been made of the value of Dr. Brown-Séquard's orchitic fluid at the Hospital for the Paralyzed and Epileptic. Drs. Wood and Whiting, the house-physicians, used it in twenty-three cases of chronic nervous disease, only one of whom showed any improvement in physical condition during the course of treatment, and as this patient was an alcoholic and relapsed again after leaving the hospital, it is open to doubt whether even in his case the injections had any causative influence in producing the improvement. It is interesting, however, to note that notwithstanding this absence of any improvement in the physical condition, nearly all the patients expressed themselves as feeling better after the injection. Perhaps it is even still more interesting to observe that two patients treated with all the same formalities by injection only with distilled water, felt very decidedly better. Two patients stated that they could feel pinching sensations in the paralyzed limbs about three minutes after the injection; both of these patients were the subject of functional disease. The observers contended that they had obtained no results which would justify further trial of this method of treatment.

Mr. Hutchinson describes a peculiar form of paralytic dementia that occurs in connection with inherited syphilis, notwithstanding the comparative rarity of diseases of the nervous system in association with this disease in its hereditary form. This condition of dementia with paralysis appears to occur between the ages of three and six years and is rather aggressive. A child who up to that age may have been of average intellect and quite free from paralysis may in the course of a couple of years be reduced to a condition of the most helpless idiocy. It seems probable that it may be an affection of the cortex, very possibly beginning in the pia, and that the nervous changes are of a degenerative nature; the onset is not marked by any of the more severe head-symptoms, such as pain, convulsions, etc., which usually attend the presence of gummata, but it is not improbable that a transitory stage of congestion may precede the degeneration. Until the attack began the children seemed as intelligent as any, and the physiognomy was not suggestive of syphilis, but gradually the

limbs became weak, the little patients ceased even to try to save themselves from falling, speech became indistinct and was gradually lost, and in the end a condition of apathetic helpless idiocy was reached. The possible connection of this state with congenital syphilis is worth bearing in mind; it seems quite in keeping with other manifestations of that disease that it should show no signs for some years after birth. The keratitis and deafness which not uncommonly arise from inherited taint both of them usually set in at an age approaching adolescence.

NEWS ITEMS.

For the Prevention of Tuberculosis.—After careful consideration of the advisability or not of compelling the registration with the Board of Health of cases of tuberculosis, the Sanitary Committee of this Board has presented an elaborate report, of which the following abstract contains the essential points:

"Consumption is an infective disease, caused by the bacillus tuberculosis. All cases take origin directly or indirectly from other cases. A most common mode of infection is by inhaling dry and pulverized tuberculous expectoration. It is a distinctly preventable disease. If all this be true, and it is based upon the most reliable scientific data, it becomes imperative that all known precautions should be employed to prevent the spread of this disease, and particularly because it is one of the most widespread of maladies.

"During the ten years, 1884–1893, there were 28,289 deaths from consumption in Philadelphia, the mortality from diseases from all causes during the same period being 217,082. The percentage of deaths from consumption to all deaths is thus seen to be 12.52. This is approximately the average percentage of deaths from this disease for the whole country. In order of numbers it stands at the head of the list of deaths from all causes. During the same period the deaths in Philadelphia from diphtheria, membranous croup, scarlet fever, typhoid fever, and smallpox combined were 7.31 per cent. of the deaths from all diseases.

"The question is not whether the most active and continuous effort should be made to prevent the spread of this fatal disorder, but whether the Board of Health should assume this duty in conjunction with the attending physician, and, as a prerequisite in the performance of this duty, require the registration of all cases of this disease. There seem to be valid reasons for believing that the registration of pulmonary tuberculosis would be beneficial."

After referring to the other means of communicating the disease, such as, for example, the use of infected milk and heredity, which are governed by other regulations of the Health Board, the report goes on to say that it would not be wise to antagonize public sentiment, which is not yet educated and aroused to the necessity of official interference, and strike terror into the hearts of the sufferers from the disease by abruptly compelling registration. A middle course is suggested, which would not be offensive, comprising the encouragement of registration as a preliminary to a future requirement, and requiring disinfection on the advice of the attending physician, after the death or removal of the patient. The report continues as follows:

"The weight of medical opinion in this city appears to be against the registration of pulmonary tuberculosis and the assumption by the Board of Health of the duty of active supervision and disinfection, and thus the medical profession indirectly assumes the responsibility of administering the necessary prophylactic measures applicable to this disease. It is, therefore, right and proper and necessary that the profession should realize acutely the weighty obligation which they have assumed, and they should coöperate with the Board of Health in the distribution, in the households where this disease exists, of circulars of information upon the prevention of consumption, and advise the Board of Health whenever disinfection is required. The distribution of official circulars will have the effect of enforcing attention to those sanitary details so apt to be neglected or overlooked, and thus diminish the risk of contagion in the community."

In view of its conclusions the committee offered a series of resolutions, which were adopted. They embrace recommendations that registration be postponed for the present; that circulars containing rules for the prevention of the disease be distributed; that physicians be requested to coöperate with the Board in the distribution of these circulars, and to notify the Board of cases in which disinfection is required; that a medical inspector visit each house in which a death from tuberculosis has occurred, and satisfy himself that the premises have been disinfected, and that all cases of tuberculosis reported to the Health Bureau be recorded as are cases of other contagious diseases.

Accompanying the report was a circular setting forth the various means by which tuberculosis can be communicated, and the methods of preventing its spread.

Pennsylvania Training-school for Feeble-minded Children.—At a recent meeting of the Board of Directors of the Pennsylvania Training-school for Feeble-minded Children, at Elwyn, the following medical and surgical staff was appointed: Neurologists—Drs. S. Weir Mitchell, H. C. Wood, Charles K. Mills, J. Hendrie Lloyd. Physicians—Drs. J. Madison Taylor, D. T. Laine. Surgeons—Drs. W. W. Keen, John B. Deaver. Orthopedic Surgeon—Dr. T. G. Morton. Otologist—Dr. C. S. Turnbull. Ophthalmologist—Dr. S. D. Risley. Laryngologist—Dr. S. Solis-Cohen. Gynecologist—Dr. A. E Broomall. Pathologists—Drs. H. W. Cattell, Joseph Leidy. Dental Surgeon—Dr. T. C. Stellwagen. Chief Resident Physician—Dr. M. W. Barr. Assistants—Drs. Frank White, Louise H. Llewellyn.

Medical Society of the State of Pennsylvania.—In view of the fact that the largest hotel in Gettysburg was burned recently, and will not be rebuilt in time for the coming meeting of the Medical Society of the State of Pennsylvania, to be held May 15th, 16th, 17th and 18th, 1894, it was thought proper, after consultation with the Board of Trustees, to change the place of meeting, and as the Philadelphia County Medical Society extended an invitation to meet in their city, this was accepted.

H. C. McCORMICK, M.D.

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ORIGINAL ARTICLES.

SPEECH WITHOUT A LARYNX.[1]

BY HARRISON ALLEN, M.D.,
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I HAVE the honor to report the following facts in the case of Daniel Hickey. This man talks after the removal of the larynx. The operation was performed for epithelioma by Dr. J. Solis-Cohen at the Jefferson College Hospital, April 1, 1892.[2] Dr. Cohen informs me that the parts removed included the entire larynx (excepting the free portion of the epiglottis). The first ring of the trachea was removed with the larynx, and the second was stitched to the skin of the front of the neck.[3]

The patient was mute after the operation for nearly a year, when speech returned. Inspection of the external part of the neck showed a T-shaped scar extending from the tracheal opening to near the position of the hyoid bone. The greater part of this region was occupied by a sac of irregular shape, measuring about 45 mm. in length by 26 mm. in width, whose anterior wall was the integument, and which could be easily pressed back against a resistant surface, which was doubtless that of the cervical vertebræ. The skin, which in part was occupied by scar-tissue, was perforated near the junction of the level of the old transverse and longitudinal incisions by a minute fistulous track. Bubbles of air and a little mucus escaped from this opening. Owing to the prominence of the bellies of the sterno-cleido-mastoidei muscles the sac was in a depression whose lateral boundaries were not fixed. The sac-wall apparently had no muscular power, and was exceedingly flaccid. It will be seen that it moved freely from slight forces exerted within the mouth and pharynx. Its size varied only with the amount of air or fluid it contained. The tracheal opening was red in color, and apt to be coated by scales of inspissated mucus. The position of three rings of the trachea could be made out by the unevenness of the tracheal surface rather than by any contrasted effects of colors. The trachea moved slightly (synchronously with the pulsations of the heart) from left to right.

Examination with a laryngeal mirror, placed as in the position usual for laryngoscopy, showed the base of the tongue and the epiglottis to be normal. The epiglottis was large, broad, and but slightly depressed in the center. It stood erect. A deep, funnel-shaped depression, answering to the interior of the sac, extended from the pharynx downward. No details could be detected within the sac other than a small scar-like structure at the posterior border of the aperture. This appeared to be most distinct at the time of a deep inspiration. I speak here of the *time* of the inspiration, and not of the assumed passage of air from the pharynx into the sac. When the nostrils were closed, the mouth open, the tongue protruded, and a film of mucus was stretched across (as was often the case) from the tongue to the velum palati, it was interesting to note that the film would persist for an indefinite period, thus proving that no air entered the sac during respiration. Forcible closure of the nostrils would often cause the film to bulge forward and break. I assume that the displacement of the air from the nose had slightly compressed that in the pharynx. The sac was seen to be easily closed by pressure from without, the two lips came together, and the whole space was obliterated. The fistulous track through the wall of the sac was valvular. A probe passed through it was easily discerned in the pharynx. The outer end of the fistula being covered with plaster, and the nostrils and mouth closed, the sac could be distended so as to become convex anteriorly. I assume this was caused by elevation of the base of the tongue and velum, and consequent displacement of the air of the mouth and pharynx downward.

FIG. 1.

Respiratory curves made by motions transmitted by the neck to level placed on sac.

The respiratory phenomena, although not subjected to precise experiment, appeared to be normal. The patient breathed from nineteen to twenty-two respirations per minute. The chest-expansions were free and unimpeded. A tambour being held in contact with a lever placed on the sac, and so arranged as to transmit impulses to a second tambour so disposed as to have its movements recorded on a kymographion, was found to make a downward

[1] A report of an investigation made at the instance of the College of Physicians of Philadelphia, and presented March 7, 1894.

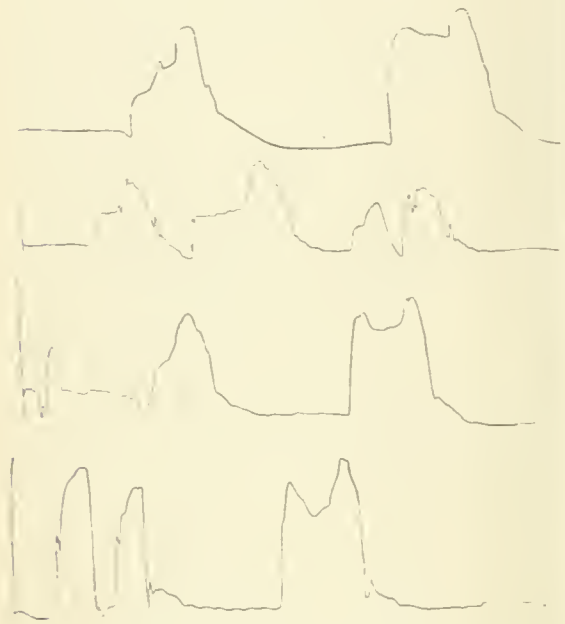
[2] See Trans. Phila. County Medical Society, vol. xiii, 1892, p. 302; also Trans. College of Physicians of Philadelphia, 3d Series, vol. xv, 1893, p. 131.

[3] A brief reference to the operation will be found in THE MEDICAL NEWS of July 23, 1892, p. 98: and a reference to the subsequent course of the case in THE NEWS of February 18, 1893, p. 195.

tracing during the act of respiration, while the form of the sac did not change in shape. I conclude that these movements were secondary. The changes here noted were due to the motions of the neck itself during the act of respiration. and were probably related to the elevation of the clavicles and the upper part of the thorax. (Fig. 1.)

The act of swallowing was performed with comparative ease, though food was apt to pass into the sac. Liquids flowed out readily from the fistula. Pressure on the sac with the finger prevented the passage of both solids and liquids, and this pressure was regularly employed by the man in eating and drinking. The tracing made on the kymographion varied exceedingly, and appeared to be due to inconstant use of the tongue and pharyngeal muscles. Some of the tracings of deglutition are herewith given. (Fig. 2.)

Fig. 2.



Tracings of the variants of deglutition.

The voice appeared to be true, as opposed to a whisper. It was thin, harsh, and weak, though estimated by Dr. Cohen to be heard at forty feet. Wheezy sounds of air escaping from the lung occurred coincidently with speech.

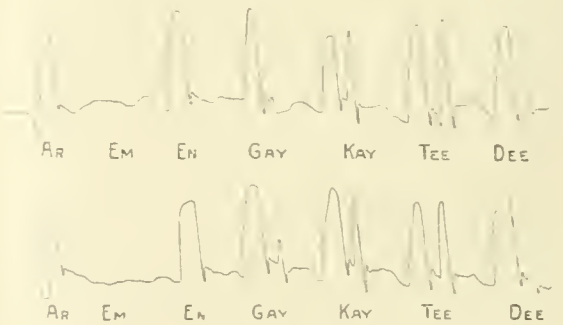
The voice was fairly well modified, and was capable of slight shades of expression. The patient could sing a song, and while the musical character of the performance was *nil*, the difference in tone between the attempt at singing and ordinary utterance was evident.

In studying the phenomena of speech the first experiments were directed to the tongue and velum. I repeated the observations of Dr. N. Kingsley to ascertain after what manner the tongue was used in articulation. I secured the assistance of Dr. W. Christensen, a dentist in this city, who kindly prepared a number of vulcanite plates. Coating one of these with a mixture of alcohol and prepared chalk, and placing it in the roof of the mouth, I directed the patient to pronounce the letters of the alphabet. The tongue wiped away the chalk and exposed the black color of the rubber beneath. It was easily ascertained that the contact of the tongue against the velum and palatal vault was made in a normal manner, the only difference between those thus obtained and those made in the mouth of Dr. Christensen himself being of a character that could be readily explained by individual peculiarity. The patient was rendered mute by the insertion of the plate, but by a little practice the voice returned. The slightest pressure of the plate against the velum immediately destroyed the power of utterance.

The voice was next recorded on a phonograph. This was done with the object in view not only of eliminating the tracheal noises, but of catching the shades of distinction of the voice that could not be detected by the unaided ear. I regret to say that these experiments were without results.

The third series of observations consisted in careful inspection of the sac during enunciation. The following facts were elicited: Just before speaking the patient inspired: then at the time of talking (the pronunciation of definite simple sounds was practised) the sac filled and emptied. The levers with tambours were here used, and their movements were recorded on a kymographion, as in the case of the respiratory movements. All of the speech-tracings were upward, and were thus quite unlike those of respiration. (Fig. 3.) Filling of the sac occurred

Fig. 3



Tracings of consonants *r*, *m*, *n*, *g*, *k*, *t*, *d*—Continental pronunciation.

in all the consonants in which *e* (*i. e.*, the sound made in the English alphabet) entered. *G* (gay) produced, as was expected, a maximum amount of movement in the sac-wall. The least constant movement occurred in *m* (em). While engaged in repeating these sounds it occurred to me that it would be convenient to have a number of phonetic characters arranged in the order of their formation from the throat toward the teeth, and I accepted the following as fairly representative of such a series: *r*, *m*, *n*, *g*, *k*, *l*, *s*, *t*, *d*. All observations were made

with the patient reading aloud these letters from a chart placed in front of him, while the head was supported to eliminate all body-movements. It was soon noticed that the movements in *m* were the least constant, and the sac-movements were influenced by the act of respiration. If a full inspiration were taken, and *g* pronounced and *m* followed, scarcely any motion ensued in the sac, while if, after a full inspiration, *m* was at once pronounced the sac-walls moved almost as freely as in the pronunciation of any other sound. At the same time it was evident that while neither the air of inspiration nor that of expiration was used, the patient could speak only during expiration. I recognized the subject to be complex. The difficulties in maintaining exact uniform contact of the lever against the sac were considerable, and had not been overcome at the time the experiments were interrupted. But this much can be said: that the movements of the sac-wall were freest in the formation of the sound when the base of the tongue is known to assume the largest size (*i. e.*, humping upward), and that they were limited in range or entirely absent when the base of the tongue was known to move upward the least in the manner described; therefore, that the times of enunciation and those of movements of the sac were synchronous, and that a direct connection existed between the movements of the sac and those of the tongue. In a word, the movements of the sac-wall were due to compression of air in the sac, due in its turn to displacement of air in the mouth and pharynx. (Fig. 4.)

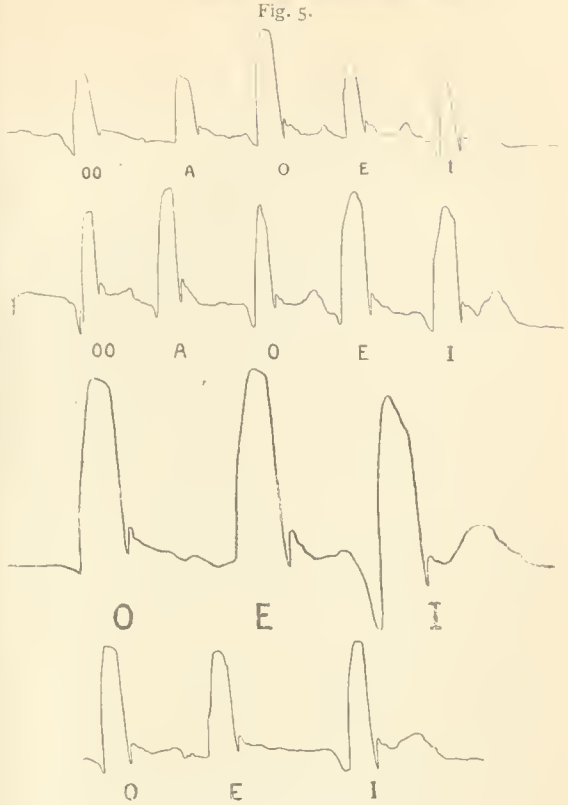
Fig. 4.

Tracings of the same consonants illustrated in Fig. 3. The crosses represent the times of expiration.

Enunciation of the vowels permits air to pass through the mouth through relatively wide apertures as compared with enunciation of the consonants. Among the vowel-tracings I secured, as a rule, a single curve. (Fig. 5.) The variations were sufficient to lead one to suspect that oscillation was a disturbing tor. Yet, when allowance is made for this error, the tracings are seen to be broadly contrasted with those of the consonants, and the semi-vowels *l* and *r* to be (as they should be) quite like the vowels themselves. (Figs. 6 and 7.)

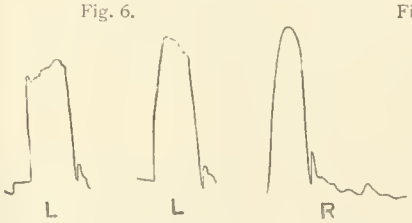
Enunciation of the consonants permits air to pass through the mouth with difficulty, if at all, and we find with them a disposition to form a double tracing, excepting in the case of *m* and *n*. The fact that *n* sometimes has a semi-vowel value probably accounts for its curve being at times like that

Fig. 5.



Variants of the tracings of the vowel sounds. Continental pronunciation.

Fig. 6.



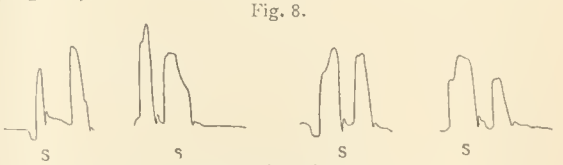
Variants of the letter *l*.

Fig. 7.

Variants of the letter *r*.

of a vowel. Further investigation will be demanded to settle this point. I thought I had secured a uniform, constant value for this letter, but I may have been mistaken. As a rule, it may be said that the greater the resistance to the outward flow of air the more striking become the sac-movements. As can be surmised, these were greater with surds than with sonants, and therefore were greater with *t* than with *d*, and were marked with the sibilant *s*. (Fig. 8.)

Fig. 8.



Variants of the letter *s*.

Stimulated by these observations, I was about to institute a carefully devised series of tracings based

on the tenets of phonology, when the investigation came to an end.

The relation which existed between the distention of the sac and the movement of respiration and in pronouncing *m* remains unexplained, as indeed did the following curious observation: Occlusion of the tracheal opening, care having been taken to avoid any pressure on the sac, at once arrested speech. I tried this experiment many times. Again, occlusion of the sac likewise arrested speech. I unfortunately failed to observe if this could be overcome with practice, as was the case with the use of the vulcanite plate, or whether a whisper might have been developed when the sac was closed.

The views entertained as to the significance of articulate speech make it necessary that a current of air should vibrate against a flexible hem or border. Dr. Cohen informs me that he thought the scar-like band on the posterior aperture of the sac might serve this purpose. I see no reason why this might not at least assist, while the general constriction of the circular fibers of the inferior and middle pharyngeal constrictors might act as the cause of the speech by the air vibrating against lips of muscle-ridges which existed only at the time that enunciation occurred. The motions of the sac were also to be explained by these constrictions and (as already stated) by the tongue. But why the act of respiration is in any way related to the performance of these acts is not apparent, unless we assume that the muscle-movements are part of a complicated mechanism which demands the participation of the respiratory act as well as the pharyngeal and oral mechanisms, even in the accidental circumstance of the laryngeal apparatus being absent.

The hypothesis that at first sight is reasonable, that the sac fills when the lung fills, and that sound is produced while the sac empties itself during expiration, is in harmony with the physiology of normal speech. But I cannot see how this opinion can be entertained if it be conceded that the sac did not fill during inspiration, and that the respiratory act did not affect it any more than it did any other part of the neck. But the movements of the sac were coequal with the time of enunciation, and while influenced in a measure (as in pronouncing *m*) by the act of respiration, were not dependent upon it. The idea that speech may have occurred during inspiration is suggested by the shape of the respiratory curves on the kymographion, but this was at once invalidated by the fact that the tracheal noises of expiration were always synchronous with speech, while the respiratory curve was downward instead of upward.

I venture to express the opinion that the displacement of air from the pharynx by the constriction of the lower pharynx was nearly normal, and the humping of the lingual base absolutely so. That these produced so great a change in the sac of our patient was due to the absence of a check-mechanism, the larynx itself, which thus acts in the norm as a barrier to the retrocession of the compressed air. In health the vocal bands when adducted form an almost complete barrier to the entrance of air, and in order that the bands themselves be spared from pressure, laryngeal ventricles are provided to receive and hold it. Not only is this the case, but, in the act of swallowing, these sacs may also serve a purpose of accommodating the air, which, being pushed in advance of the ingesta, would be thrown into the trachea were not a special mechanism provided. The muscle constrictors at the laryngeal orifice exist for this purpose in health. It is noted that the epiglottis is not spoken of in this connection as a factor, either in speech or as an aid to prevent the entrance of food into the larynx. It is my opinion that if it held such an attitude it would have exerted some influence in protecting the sac against the entrance of both solids and liquids in the act of deglutition.

While making the statement that the patient had voice, it is tenable that it was a voice created by the presence of an adventitious resonating chamber established in the region of the larynx, and that the utterances were of the nature of whispers reinforced by the air in this sac.

A BRIEF SPLINT-TECHNOLOGY FOR SURGEONS.[1]

By EDWARD A. TRACY, M.D.,
of Boston;
Fellow of the Massachusetts Medical Society.

The objects of this paper are to treat in detail of a new material and method devised for surgical splint-making; to aid the surgeon to become the maker of suitable splints for cases occurring in practice; and to indicate lines of procedure in apparatus-making that promise rich results in general and orthopedic surgery.

The Material.—The basis of the material employed is wood-pulp, made preferably from the crushed fiber of the poplar tree, and rolled in such fashion that the broken fibers intertwine in every direction and loosely, so that an increase of plasticity is thus given to the product. These sheets are further strengthened by having a fabric introduced between the layers of the pulp, or by interweaving with the short, crushed wood-fiber, a long jute or other tough fiber.

The sheets are rolled of different thicknesses, for adaptability to all splint-conditions. For convenience I shall designate the thickness by number,

[1] An abstract of a paper read before the first Pan-American Medical Congress, at Washington, 1893.

each unit representing a thickness of one millimeter; thus, sheet 1 represents the material with a thickness of one millimeter; sheet 2, with a thickness of two millimeters, and so on.

Characteristics of the Material.—The chief characteristics of this material are stiffness or rigidity when dry, and plasticity when moist. Its rigidity can be increased *ad libitum* by the use of a silicate solution as a moistener. Its plasticity has a limit. The limit is rarely experienced and only when molding the material over certain complex curved surfaces. To exemplify: A splint cannot be directly molded over the ankle-joint anteriorly, for there are two large curves in opposite directions to be followed simultaneously, the convex curve from malleolus to malleolus, and the concave curve from above downward over the leg and instep. This difficulty, when met, can be obviated in various ways. I shall mention three of them. Take the case of the ankle-joint: An anterior splint is required for it. The proper-shaped blank should be cut from sheet No. 1 and moistened with one of the solutions to be described later. It should then be applied to the limb, care being taken to keep its outer border in contact with the skin, while the superfluous material over the anterior aspect of the joint should be pinched between the thumb and forefinger, and all of it laid or pressed over to one side; a bandage should be snugly applied to perfect the molding of the splint. (This method of "pinching and folding over" has an important application in the making of spinal jackets.) A second way consists in cutting away the superfluous material, in this case an elliptic figure, and bringing the edges of the cut portion together, and so retaining them by means of a strip of the material pasted over the cut edges. A third method is to cut a blank for each important curve and, after molding, to properly unite them.

Besides the foregoing characteristics, the material possesses that *desideratum* of a splint-material—extreme lightness. Its cheapness also deserves a passing mention.

Moisteners.—Water or a stiffening solution can be used to moisten the material. The advantage of water is its omnipresence. A serviceable splint can be made with its help. Such a splint should be protected from perspiration or other moisture, lest it be softened and its usefulness destroyed. It can be so protected by a covering of oiled paper or silk, by mackintosh, or best by a coat of varnish.

A stiffening solution, with several qualities to recommend its use, is that of silicate of potassium; silicate of soda is almost as serviceable. Any desired degree of rigidity can be imparted to a splint by using this solution—the amount of rigidity depending on the strength of the solution. A splint rendered rigid in this manner is not affected by perspiration, or indeed by momentary contact with fluids, as in washing. Another advantage, especially in cases of compound fracture, is that this solution renders the splint antiseptic.

In practice, the solution of silicate of potassium generally sold for surgeons' use, and further diluted with water, can be employed. The commercial solution is regarded as a 100 per cent. solution, and the percentage solutions spoken of in this paper are to be made by diluting the commercial solution with the proportion of water called for by the percentage; thus a 70 per cent. solution is made by mixing 70 parts of the commercial solution of silicate of potassium with 30 parts of water. The commercial solution should have a specific gravity of from 1.3 to 1.4.

Another useful stiffening solution is that of dextrin, in the proportion of about ʒviij to Oj of water. This solution adds some tenacity, besides stiffness, to the material treated with it. A splint made with its aid can be remoistened with water and remolded—quite an advantage in cases in which, from disappearance of swelling or other cause, a closer approximation of splint and limb is desired. In practice, dextrin (to be had of paint-wholesalers) can be carried in powder form, and a solution in water extemporized when needed. (An addition of 8 gr. of corrosive sublimate to Oj of the dextrin solution will render it antiseptic.)

Moistening Process.—A few descriptive words should be added concerning the proper manner of moistening the material. The aim should be to get barely sufficient moisture into the material to render it semiplastic. If more moisture be absorbed, it becomes more difficult to maintain the molded splint in the desired shape while drying, and it also unnecessarily lengthens the time required to dry the splint. I find the best manner of moistening the splint-blank is to apply the fluid used, on each side of it, alternately, by means of a flat paste-brush. A little practice will enable one to judge the precise amount of moistening best suited for the purpose.

Drying. — The time required for drying the molded blank varies, for the different sheets employed, from ten to forty minutes; the thicker sheets, holding the more moisture, require a longer exposure to heat. Any source of sufficient heat can be employed; a good kitchen fire is very efficient and, generally, convenient. While the splint is drying it is serviceable to have yarn or string wound around the moistened form after its removal from the body, to aid it to maintain the desired form, until permanent drying fixes it.

I shall briefly consider the application of splints to the human body, under the headings—

1. Head splints.
2. Trunk splints.
3. Upper limb splints.
4. Lower limb splints.

This simplicity of classification will necessarily be violated in specific cases in which compound splints, embracing parts of different systems, are constructed.

[The following four descriptions are selected from the original paper for illustration in this abstract.]

1. A CERVICAL SPINE SPLINT.—This splint is devised for fixation of the cervical vertebræ. The blank is cut from sheet No. 2 or from sheet No. 3, according as the case is that of a child or an adult. The head of the patient should be supported in the desired position while the moistened blank is being molded over the back, shoulders, neck, and occiput; the molding is facilitated by the use of a gauze bandage applied snugly over the blank. After a short retention the molded blank should be removed and dried. The neck-piece can be reinforced if desired. The complete splint is pictured in Fig. 1.

FIG. 1.

A cervical spine splint.

2. A SPINAL JACKET.—I shall here briefly suggest a technique for a simple, cheap, and serviceable jacket.

The blank is to be cut from sheet No. 1 and moistened with a 75 per cent. solution of silicate of potassium. This blank is of the simplest pattern, being sufficient to envelop the patient's body, once and a quarter around, and its width governed by the amount of spine we desire to control. The needful trimming of the blank can be done upon its first application to the body. The patient should be placed in the same position as for the application of a plaster jacket; he should have on him a tight-fitting woollen undershirt. The blank is to be applied to the body by commencing on the front about two inches beyond the median line, and keeping that portion in place, guiding the rest of it around the body so as to overlap considerably in front. A vertical line should be drawn on the overlapping piece, from the armpit; the object of this line is to give position to the hinge-joint which we require in the jacket to facilitate removal and reapplication. The joint is made by bending the moistened blank backward and forward along this line until the pulp is sufficiently broken—the fabric imbedded in the sheet forming the hinge. After drying the jacket, this hinge should be strengthened by gluing strips of chamois skin, one inch wide, over the hinge, inside and outside.

FIG. 2.

A spinal jacket.

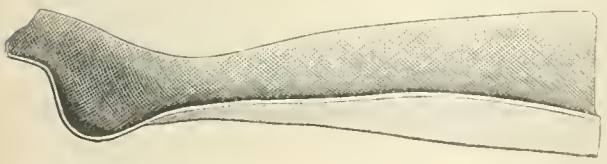
The blank having been applied to the body as described, we proceed to make it conform to the body-surface as accurately as possible. We place over the spines a large pad (two large rolled bandages, each four inches in diameter and six inches long, placed end to end, do well), which serves to press the blank well into the hollow of the back. Further conformation to the body is obtained by the "pinching and folding over" method described. Here this method is particularly advantageous, for it adds threefold to the vertical strength of the jacket, without a material increase of its weight. A gauze roller-bandage should be so applied over the whole blank as to hold it in snug apposition to the body. After a few minutes' retention the bandage should be taken off and the jacket carefully removed; in doing so the hinge described should be made use of, so as to disturb as little as possible the form imparted to the jacket. If the blank has been properly moistened, but slight aid to hold its form need be given to the jacket, till drying permanently fixes it. Thus, the foundation for a good spinal

jacket is completed. It can be reinforced as desired. Straps can be fastened to it for its adjustment, or lacing bands can be applied to it for the same purpose. Fig. 2 illustrates a spinal jacket which was molded on and worn by a boy of six years. The binding and fasteners are made of chamois skin, glued by means of a cheap liquid glue directly to the jacket. The hinge-joint is here omitted, the natural resiliency of the material sufficing for the removal and reapplication of the jacket. The jacket was made at the child's home in about forty minutes.

3. A Palmar Forearm Splint.—This is a very simple but important splint. It meets the indications that Cheever emphasizes in the treatment of a Colles' fracture. That accurate surgeon says: "The important point would seem to be . . . . not to press the back of the wrist down in such a way, by splints, that we shall lose sight of this arch, which is so marked, under the radius. . . . . This arch must be well supported. . . . . The splint should terminate at the head of the metacarpal bones, and the thumb and fingers should be left free.[1]"

The position of the forearm for the splint pictured in Fig. 3 was that of semi-pronation; that of the wrist, semi-extension—its natural position of rest. The pattern should slightly overlap the ulnar side of the forearm, so that there will be sufficient material in the blank to be molded over that side of the forearm. The blank should be cut from sheet No. 1 and moistened carefully with a 75 per cent. solution of silicate of potassium. The blank should be applied to the palmar surface of the forearm, so that the ulnar side is overlapped by the blank. The

Fig. 3.



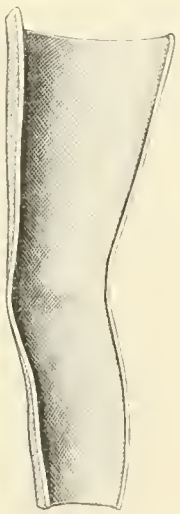
A palmar forearm splint. (Right, viewed from radial side.)

blank should then be carefully molded over the forearm in the position described. After snugly applying a roller bandage over the splint, commencing at the wrist, then enrolling the hand, and finally the arm, pressure should be applied by squeezing the forearm and splint between the thumb and fingers at a point one inch and a quarter above the styloid process of the radius, where the arch of the radius is most pronounced. The direction of the pressure, it need hardly be mentioned, is from the palmar to the dorsal side of the forearm; its object is to give the splint an arch approximating that of nature. After squeezing in the manner described for a moment, the splint should be removed and dried. A side or radial view of the completed splint is pictured in Fig. 3.

The curve of the splint caused by the arch of the radius is there imperfectly illustrated. The curve of the splint, made by molding the overlapping portion of the blank over the ulnar side of the forearm, is important, because it is the main source of the strength of this splint.

4. A Latero-posterior Knee Splint.—This splint is for fixation of the knee-joint. It is a modification of the so-called ham-splint. It differs from the ham-splint in having a surface that is applied to the lateral surface of the limb (preferably the inside), as well as to the posterior aspect. This

Fig. 4.



A latero-posterior knee splint. (Left.)

addition greatly strengthens the splint and aids its fixation. The blank should be cut from sheet No. 2 (sheet No. 3 for a very powerful limb), and moistened with a silicate solution. The blank should be applied to the limb so that the portion corresponding to the shaded part of the pattern lies over the internal aspect of the limb. The molding of the splint is perfected by applying a roller bandage snugly about it; after a moment's retention to the limb the splint should be removed and dried. A completed splint for the left knee is pictured in Fig. 4.

[1] Lectures on Surgery. By David W. Cheever, M.D. See Lecture X. Boston Medical and Surgical Journal, vol. cxxix, p. 2.

Dr. Hans von Hebra has been made Professor Extraordinary of Dermatology and Syphilis in the University of Vienna.

THE COMMERCIAL FORMS OF HYDROGEN DIOXID.

BY HENRY LEFFMANN, M.D.,
OF PHILADELPHIA.

ABOUT about two years ago (MEDICAL NEWS, April 9, 1892), a note was published by Dr. Beam and myself on the analysis of some samples of hydrogen dioxid, the brands selected being such as were in common use. The figures showed that considerable difference existed between the articles, and that some brands were decidedly inferior, both as to strength and purity. Similar investigations have been reported by others. Thus Dr. Smith, of the Yale Medical School, published in the *New York Medical Journal* of August 6, 1892, a table of analyses of many samples purchased in small amounts at retailing drug-stores. The maker's name was obtained when possible. These analyses showed much variation in quality, but the manufacturers may not be responsible for all the deficiencies observed. Some samples were found to contain no hydrogen dioxid, and others very little. The same issue of the *Journal* contains a paper by Dr. Squibb, discussing the method of assay, and giving the results of examinations of some much-used brands as sent out by the makers. Dr. Squibb gives figures only for the strength in available oxygen, but he states that several brands contain much more free acid than is either necessary or permissible. In the last number of *The Ephemeris* (January, 1894), Dr. Squibb details an elaborate study of the preparation and properties of the dioxid, but the information concerns the chemist and pharmacist rather than the physician. The papers of Drs. Smith and Squibb confirm, as far as they cover the same ground, the figures given by Dr. Beam and myself. It has seemed advisable to repeat the analytic tests, to determine if any perceptible improvement in the quality of the commercial articles has followed the publication of the analytic reports.

Incidental to the discussion of this subject, it has been shown by Dr. Squibb that a process for the assay of hydrogen dioxid, furnished by Mr. Marchand, and adopted by many, gives erroneous results, exaggerating materially the value of the sample tested. Correct methods of assay show that no solution is ordinarily obtainable in the market of higher strength than twelve volumes, and that many do not equal this. When properly prepared these solutions are not nearly so liable to decomposition as was formerly supposed. They keep for some time in a moderately cool place, and will bear gentle heating without serious loss. Many of the samples herewith noted were kept in my laboratory for several weeks at a point where the temperature was in the neighborhood of 70° F., the corks being not very tightly inserted, and a second determination was then made, the results of which are given in the table appended. It will be seen that there has been little loss, and, indeed, slight concentration has occurred in a few cases. This has been noted by others, and is due to the fact that hydrogen dioxid is less volatile than water.

One of the points indicated by the results is that reputable manufacturers should cease claiming a strength of fifteen volumes. The use of these figures may have been originally due to the employment of the erroneous method of assay noted, but there is now no justification for continuing the error, as the United States Pharmacopeia gives a correct process. On the other hand, there does not appear to be any reason that the article should be sold to the trade without some indication of strength. Many samples were found to be sufficiently decomposed when purchased, even when sent directly from the place of manufacture, to produce marked explosions when the corks were loosened. This must be considered an unfavorable point, as a good eleven-volume solution may be made that will not be so easily decomposed.

Some interest attaches to the amount and general nature of the impurities present, and determinations of a few of these have been made. It is not possible, at least not commercially practicable, to make a solution consisting of water and hydrogen dioxid only, and the material will not keep without a trace of acid. The acid is usually either sulphuric, hydrochloric, or phosphoric, and according to the standard of the United States Pharmacopeia it is required that barium shall not be present. Squibb asserts in the article in *The Ephemeris* that barium is highly objectionable, though I am not able to see how a small quantity can do harm. Only one sample of all examined by me gave a reaction for barium, and a quantitative determination showed that this sample contained 35 milligrams (about half a grain) to the liter. I cannot regard this amount as objectionable in any way. The sodium hydroxid solution used was a little weaker than decinormal.

The following table shows some very interesting points. In the first place, it is not surprising that satisfactory results are sometimes not obtained with the agent. The poor quality of Nos. 5 and 6, both from the same manufacturer, but obtained through different wholesalers, is especially noticeable. The specimens are little else than dilute sulphuric acid. Nos. 15, 16, and 17 are accompanied by a circular claiming great purity and strength, and especially claiming only a trace of fixed residue; yet it is seen that the residue is the highest of the series. These samples were all from the stock of a large general hospital, to which they were furnished by the makers as specimens.

BRAND.	Volumes of oxygen.		C.C. of NaHO for 50 c.c.	Residue from 50 c.c.	Pressure on opening bottle.	Response to test for	
	1st test.	2d test.				Sulphates.	Chlorids.
1. Oakland Chemical Company	11.0	11.2	4.5	0.028	None.	None.[1]	Marked.
2. Béné	9 9	9 8	10.0	0.106	Moderate.	Marked.	Slight.
3. Marchand	8.3	8.5	10.5	6.034	Strong.	Slight.	Marked.
4. "	7.5	.....	7.0				
5. Merck	1.1	.....	27.0	0 164	Moderate.	Marked.	Slight.
6. "	1.6	1.5	26.0	0.116	Strong.	"	"
7. Powers & Weightman	9.6	9.5	6.5	0.089	Moderate.	"	"
8. " " "	.....	9.6	7.0	.....	Strong.		
9. " " "	9.7	9.7	7.0	.....	Moderate.		
10. " " "	.....	10.2	7.5	.....	"		
11. Rosengarten & Sons	6 7	6.6	2.4	0.030	None.	None.	Slight.
12. " " "	.....	6.2	5.8	0.026	"		
13. " " "	.....	7.1	4.0				
14. Lehn & Fink	3.7	3.6	19.0	0.120	Marked.	Slight.	Marked.
15. Pouchet	8.0	7.0	0.363	Strong.	"	"	
16. "	....	8.2	8.0	.....	"		
17. "	.....	8.8	8 5	0.358	"		
18. Squibb & Son	11.1	10.8	10.5	0.111	Very slight.	Slight.	Marked.
19. Drevet	8.2	7.6	7.5	0.059	" "	"	"
20. Smith-Klein-French Company	7.5	7.3	20.5	0 108	None.	Marked.	"
21. McKesson & Robbins	.....	10.0	2.2	0.031	"	Slight.	None.

It is hardly necessary to point out the other details of the table, but as an evidence of what can be accomplished I would like to call attention to the low acidity of Nos. 1 and 21, which show full strength and excellent keeping qualities.

The analytic investigation shows, therefore, that while there are several excellent brands of hydrogen dioxid on the market, there is still a great deal of inferior material, and that the reputation of a manufacturer is no assurance of quality. When it is considered that the assay of this material is easy, and its stability when properly made is satisfactory, it seems that the physicians and pharmacists have a right to require that at least a ten-volume solution, containing only a small amount of acid and of solid matter, shall be furnished. Moreover, there is no excuse for a druggist dispensing a weak preparation. He can exercise with but little trouble a control over his purchases of hydrogen dioxid, and a bottle once tested (only 1 c.c. is required for a test) can be kept so that very little loss of strength occurs during a reasonable time.

Actual trial by prescriptions at two drug-stores, one in the center of the city and the other in the northeast section, resulted in obtaining very satisfactory samples, each showing nearly eleven volumes.

Some very poor samples, in one-ounce bottles, have been obtained from special supply-houses (not dealers in drugs), but the data in regard to these will be published elsewhere.

Solution of hydrogen dioxid may be concentrated upon a water-bath to a strength of fifty volumes or more. A smooth dish should be used, and the liquid be protected from dust, for, as Squibb has shown, any rough surface promotes decomposition. Judging from the rapid evolution of gas which occurs when solutions are heated over even a low-temperature burner, it is necessary to use a water-bath. Freezing may also be used to concentrate the liquid. Tight corking does not prevent decomposition, and the practice of wiring corks leads to dangerous pressure in the bottles. I have noted in the table the existence of marked pressure in some samples, and most of these produced, on releasing the cork, a violent noise which would be decidedly distressing in the sick-room, in addition to being an indication of imperfect preservation.

[1] Contains 35 milligrams of barium per liter.

HYSTERECTOMY FOR OTHER CONDITIONS THAN FIBROID AND MALIGNANT TUMORS.[1]

BY CHARLES B. PENROSE, M.D.,
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UNTIL very recently the operation of hysterectomy was confined practically to two conditions, malignant disease and fibroma. The improved technique and the admirable results obtained in the modern operation for these conditions have led to its extension to other diseases of the uterus and the appendages. The most radical proposition is: to remove the uterus in every woman in whom it is necessary to remove the uterine appendages. A second less radical proposition may be thus stated: In any case of pelvic disease when there is necessary for cure an operation on the appendages that renders the woman sterile, hysterectomy is a valuable addition to the operation under the following circumstances: when the uterus is diseased; when it is likely to become so; when its removal will facilitate the operation.

[1] Read before the College of Physicians of Philadelphia, March 7, 1894.

I have been following this latter plan since June, 1893, and wish to report my results and conclusions to the Fellows of the College with the object of obtaining their views upon this new plan of treatment.

The number of cases is not large, but represents a variety of conditions. In a series of seventy-five celiotomies on women for different forms of pelvic disease, exclusive of fibroid and malignant tumors, I have found it of distinct advantage to remove the uterus in fifteen cases, which may be grouped under the following headings:

I. Cases of double salpingitis, generally pyosalpinx, the disease extending into the uterine cornua in the form of a hard cheesy nodule, or an abscess in the uterine tissue; large uterus, chronic metritis and endometritis; profuse irritating vaginal discharge, probably gonorrheal.

II. Cases of salpingitis and ovaritis; flexed or displaced uterus, with or without adhesions; endometritis.

III. Salpingitis of which tuberculosis is the probable cause.

IV. Cases of ruptured tubal pregnancy, of pelvic abscess, or of any accumulation in the pelvis in which the uterus forms part of the wall surrounding the accumulation. The removal of the uterus facilitates the operation and perfects hemostasis.

It must be remembered that in all these cases the uterus was removed as an addition to an operation which rendered the woman sterile. I think that we can consider that the removal of the Fallopian tubes renders the woman sterile, except in very rare instances.

The gonorrheal cases form a large class representing the most frequent form of salpingitis, and in this disease I think that hysterectomy is a valuable addition to the old operation of simple salpingectomy. In several of the gonorrheal cases my determination to perform hysterectomy was based on the fact that gonococci had been found in the discharge from the os uteri. In others the history of the case and the presence of gonorrheal lesions, such as inflammation of the vulvo-vaginal glands, or their ducts, or urethritis, indicated the gonorrheal origin of the disease, and finally in other cases gonococci were sought for by an assistant in the tubal contents during the operation.

In cases of gonorrheal pyosalpinx the old operation of removal of the tubes relieves the woman from the danger of rupture into the peritoneum. But it does not cure her. The disease continues in the endometrium and in the deeper structures of the uterine wall, often extending from the tubes into the uterine cornua. Careful operators have in these cases been in the habit of removing, by a wedge-shaped amputation, the proximal end of the Fallopian tube. This operation, however, requires almost the same length of time as hysterectomy, and is not followed by perfect hemostasis.

The operation of hysterectomy, however, cures the woman of the leukorrhea which is often the symptom of which she complains the most.

I have tried by all the means devised to cure gonorrheal endometritis, with but very unsatisfactory results. I have never cured it in a case in which pyosalpinx had coexisted. If we leave the uterus in these cases the woman continues to have an irritating infectious discharge, and she is not considered cured by herself or by her husband.

In posterior displacement, with salpingitis and adhesions to the fundus uteri, removal of the uterus gives more promise of cure than simple removal of the tubes. It is a mistake to suppose that the posterior displacement will remain corrected by the tension of the broad ligaments following a simple salpingectomy. In one case in my series the tubes and ovaries had been removed some years before my operation, and yet the uterus was in a position of extreme retroversion, and the pressure of the fundus upon the rectum caused such pain that for some months before the operation every movement of the bowels had been preceded by a hypodermatic injection of morphin. Hysterectomy stopped the pains and the morphin-habit.

In tuberculous disease of the tubes I think that hysterectomy should always be performed. The investigations of Williams (*Johns Hopkins Hospital Reports*, vol. iii) show that in this disease the uterus and endometrium are affected in from 40 to 60 per cent. of the cases. Unfortunately it is at present impossible to determine the tuberculous character of many cases of salpingitis by the gross appearance at the time of operation, and we are unable to determine the full extension of the disease.

In a case of salpingectomy performed last November the microscope showed tuberculous infiltration in the tubes extending to the plane of section. Had I known this at the time of operation I would have removed the uterus.

In one case of suspected tuberculosis I curetted the uterus and examined the scrapings before the operation and then performed hysterectomy on account of the probable tuberculous character of the endometritis.

The fourth class of cases in which the operation is facilitated by the addition of hysterectomy is illustrated by a case of ruptured tubal pregnancy. The woman had a ruptured tubal pregnancy on the left side. The pelvis was filled with old blood-clot which was walled in by adherent intestines above and by the uterus and broad ligaments in front. The abdominal ostium of the right tube was closed,

and the tubes and ovary were bound down by adhesions. In this case the removal only of the blood-clot and as much of the sac as was practicable would have left behind a large bleeding uterus destitute on two-thirds of its surface of any peritoneal covering—and functionally useless when the tubes and ovaries were gone on each side. Its removal, however, enabled me to secure quick and complete hemostasis and to avoid an elaborate drainage of the pelvis.

I know of no way in which the removal of what has been called the emasculated uterus injures the woman. The results in large numbers of hysterectomies for carcinomata and fibromata show that from the mechanical and functional points of view the remaining pelvic contents are uninjured.

Unlike the ovary, the uterus does not seem in any way necessary for the maintenance of womanly traits. I think that, in cases of salpingitis requiring treatment which renders the woman sterile, the removal of the uterus along with the tubes does her less harm, from a psychologic standpoint, than the common operation of removing the ovaries with the tubes. I think that the ovaries, or parts of them, should be left in all cases where practicable, especially in young women.

An objection urged against this form of hysterectomy is the increased danger of the operation. It is undoubtedly true that in some cases the prolonged time of operation, even if only ten or fifteen minutes, may be of serious harm to the woman. In such cases I consider that the operation is improper. The determination to remove the uterus in the class of cases under consideration should depend upon the condition of the woman when she is on the operating-table. If her condition is such that she can endure the increased operation, then I think that hysterectomy is a valuable addition to our treatment in all cases of tubal and ovarian diseases requiring an operation which renders the woman sterile, provided that the uterus is itself diseased to such an extent that it will not readily yield to local treatment; or is so implicated in the pathologic condition in the pelvis that its removal facilitates the performance of a complete operation.

The statistics with which I am familiar show that the removal of the uterus under these circumstances is attended with as small a mortality as the operation of salpingectomy. All the cases in my own experience have recovered.

Dr. William Leishman, until recently Regius Professor of Midwifery in the University of Edinburgh, died February 18th, aged sixty years. He was the author of a *System of Midwifery*, which passed through four English and three American editions.

CLINICAL LECTURE.

OSTEITIS—FISTULA IN ANO—GOITER—HYGROMA—CARCINOMA OF THE STOMACH—SEBACEOUS CYST—RACHITIS, GENU VALGUM—CONGENITAL TORTICOLLIS—ANKYLOSIS OF THE ELBOW-JOINT WITH DISLOCATION OF THE RADIUS.

By JOHN B. HAMILTON, M.D., LL.D,
OF CHICAGO;
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[Stenographically reported for THE MEDICAL NEWS.]

OSTEITIS.

This patient comes to us from a distance, having cicatrices above the knee-joint on the inside of the femur, and a fistulous opening beneath the joint, with a history of having had several abscesses from which small exfoliations of bone have been removed. At these times he has had great pain. At the present time the inflammation has diminished and the sinus is reduced to a small size. Shortly after the tract thus healed pain and swelling set in and continued until an abscess formed, burst, or pointed either in the old tract or somewhere adjacent to it, and he is at present thus somewhat relieved. Such a history can only point to continuous bone-disease of some kind. The pain and the history show us the cause of these repeated abscesses. If we can keep this sinus open continuously it might discharge itself, and the pus formed would be drained without the formation of this collection of matter about the bone. When this fistulous tract is obstructed, the abscess begins to redevelop and the pus-microbes increase.

We will now investigate the condition of the bone. In the popliteal space we see an old opening which is now almost closed. A little anteriorly, on the lateral surface of the thigh, we find an open sinus. I will pass a probe into it and endeavor to reach the seat of the abscess. These old abscesses and long-continued fistulous tracts, having a history like the present case, are very seldom straight; they are almost always tortuous, and the opening that leads to the bone is found in a different direction from that portion of the surface where the fistula is seen. The probe does not reach the bone, but passes into the intermuscular septum. The pain complained of by the patient is not in a place where there is an opening or fistulous tract. I think best to open the fistulous tract as fully as possible, in order to trace and follow it until I reach its ultimate point. I find the tract passing posteriorly to the femur, but doubtless coming from the other side. We will therefore make an opening on the anterior portion of the bone with a view to reaching it more directly and by following this tract. I shall select here the border of the quadriceps. You notice the separation between the muscles. I have dissected down between the intermuscular septum so as to reach the bone. I shall now separate the tissues carefully and inspect the surface of the bone, which is, as I suspected, in a morbid state. The periosteum is diseased. I incise it and come directly down upon a small abscess which you see underneath the periosteum. The bone is denuded at this point and the periosteum separated from it, and here you

notice the beginning of the abscess. We shall now follow the sinus, and we find we can pass underneath the periosteum, which we lift with Kocher's director as it is separated from the bone. We find all of the bone in this vicinity suffering from inflammation. If you will listen attentively for one moment you will hear a hard ringing sound of extreme density when I strike the bone—a sound which cannot be emitted on striking natural, healthy bone. This portion of bone which I touch with the director is practically dead. It has become hardened or eburnated in the progress of the disease.

As I trace downward, I find that, at a point about an inch and a half below, the periosteum again becomes attached to the bone. I shall now chisel away this eburnated portion of the bone, and thus hasten the natural process of repair. The portions of bone now being removed are almost devoid of life. It would be but a short time before there would be separation of this necrosed from the living bone, which has already begun to grow about it, and by being incased we would have a sequestrum formed. This sequestrum would have to be absorbed or taken away by the slow process of Nature—a year or two, or even more, being required to accomplish the process. We may hasten it very materially by chiselling the bone away. Dead bone is simply a foreign body, and can serve no useful purpose in the animal economy. By waiting a sufficient length of time Nature would accomplish the result we are now trying to effect almost without operation, but we can accomplish it much more quickly and effectively by operative measures. I have now cut through the shell of dead bone, and the bone adjacent is osteoporotic, as must be expected from the steady inflammatory process that has been going on in this vicinity. We will now flush the wound with water so as to remove any spiculæ that may remain, and then pack it with iodoform-gauze. Iodin has been added to the water which we are about to use, and I shall see that it penetrates every portion, not only of the diseased surface, but the fistulous tract through which pus has been making its escape to the surface. We will now pack the wound with iodoform-gauze, then turn the patient on the side and scrape out with the curet all old granulation-tissue which, if allowed to remain closed up, may possibly become a pyogenic center. If the opening in the bone were more extensive I might use the bone-chips first brought into prominence by Professor Senn, but in so shallow a wound it is not necessary to use them. The object of the decalcified bone-chip is to afford a framework for the new granulations to rest upon, so that the tender granulation does not break down during the process of repair. It answers the same result as a sponge when it is properly rendered aseptic and introduced into such spaces. We accomplish the same purpose in smaller wounds by the introduction of iodoform-gauze. This has also another effect, that of preventing the oozings that not infrequently follow an operation of this character.

I shall now scrape out all of the granulation-tissue from the edge of this fistulous tract down to its point of origin, and while so doing irrigation will be maintained in order that the débris may be washed out. I will now unite the wound and shall expect primary union. You will notice that I push the knife horizontally under the edge of this incision so as to free the skin from the old cicatricial tissue, which is done in order that it may unite easily without tension and secure perfect apposition of the edges of the wound; otherwise we would doubtless find that the cicatrix would interfere with the process of repair. We will now apply a bandage to the knee and then take off the Esmarch. If I were not perfectly sure no important vessel had been cut I should take off the Esmarch before closing the wound, but I am certain none has been divided by the knife. I have followed in the line of the cicatrix and know there can be no hemorrhage resulting from this wound, but before we remove the Esmarch we will put pressure on it by a compress made of iodoform-gauze.

FISTULA-IN-ANO.

This patient is one that I have not yet examined, but I understand he has some disease of the rectum which is quite painful. I saw him a short time before the clinic and found that it was impossible to examine him until he became under the influence of ether. Externally there are some small projections. I find, on close examination, an opening in one of these projecting points. Following it as far as I can with the probe, and with the index finger of the other hand in the rectum, I find that the probe passes directly into the anus, and therefore recognize that we have to deal with a fistula-in-ano. I will search one of the other points. I also find a small hemorrhoidal tumor. I now examine the mucous wall farther up in the rectum, and finally I pack the rectum with gauze in order that the fecal matter may not obscure the operation. We then irrigate the rectum with sterilized water. We will now pass in a grooved director, then cut out this anal fistula. The operation is easily performed. I now examine the tract for other branches of the fistula, as these fistulæ are very apt to extend around the bowel, and the peculiar condition of the parts leads us to believe that we have to deal with a fistula of that sort. It constitutes what is known as a horseshoe fistula, because it traverses the circumference of the bowel in the shape of a horseshoe. If you simply cut one opening, you do not entirely remove all of the diseased portion, and a "relapse" occurs, to the disgust of the patient. I find the anterior mucous wall very much diseased and studded with soft hemorrhoids. At the verge I shall simply remove these tumors, touching them with the Paquelin cautery at the same time, to prevent hemorrhage; and searing the wound with the cautery, I bring the surfaces together, so as to secure primary union, if possible. I have previously cut out the entire fistulous tract and seared it with the cautery. I shall bring the edges together and unite them. The gauze is removed, and we now insert a large, but short, rectal tube, which you notice is of rubber and has iodoform-gauze wrapped around it. The tube is inserted in order that gases and fecal matter may pass through it. This prevents undue contraction of the sphincter muscle, and at the same time allows pressure from within, so as to prevent hemorrhage, which might otherwise occur.

GOITER.

We have here the commencement of a bronchocele or goiter. You notice the swelling extends to the right of the left sterno-cleido-mastoid muscle. The patient has had some applications of iodin made to the front, which

have blistered the skin, and from which she has just recovered. These goitrous enlargements are quite common in this vicinity. They have been treated by injections of carbolic acid. I am firmly convinced, after watching its effects for two years, that extirpation affords the shortest, if not the safest, remedy in these cases. We may extirpate the entire thyroid gland at one time, having in mind myxedema, a condition which is always to be avoided, if possible, by partial extirpation; at the same time the cases of myxedema occur most frequently in those localities where cretinism prevails without the operation. I do not believe it has been clearly proved that myxedema invariably follows extirpation of the thyroid gland. In some cases I have removed one-half of the gland, and in others the entire gland, and have yet to see a single case of myxedema following it. In view of the present state of surgery, it would perhaps be wise to leave a small portion of this gland.

HYGROMA.

We have here a small tumor on the side of the neck, soft, elastic, non-fluctuating, attached to the skin, apparently not glandular, a little painful, and which has existed since last May. I said painful—I mean painful under pressure, because the patient winced at the time of the examination. I shall explore it with an exploring-needle. The point of the needle is followed by watery blood only. The tumor does not contain pus, and is probably one of those small hygromas or watery cysts attached to the cervical fascia. They should be carefully distinguished from branchial cysts, which are deep in the branchial clefts. They are comparatively easily removed, and I proceed to the immediate removal of this one.

CARCINOMA OF THE STOMACH.

This patient was before the clinic about three months ago. He had at that time symptoms of carcinoma of the stomach, and I advised him to enter the hospital in order that we could, by colonic flushing, remove the fecal matter from the colon, diminish the tenesmus, and then by careful observation make a more accurate diagnosis than was possible at that time. However, I made a rough judgment at that time that he was suffering from carcinoma, and that the disease would progress. I find now a very distinct tumor, and there can be no doubt about the nature of the disease. I will map it out by percussion. You will notice that when I reach a certain point there is entire flatness. My hand is away from the tumor. See how resonant the intestine is where it is healthy. Placing my finger over the swelling, I can map out the colon where it becomes charged with fecal matter. Near the sigmoid flexure we find dulness again; over the surface we found resonance. The patient vomits daily, two or three hours after eating. He tells us that he eats very little solid food, and emaciation is now in rapid progress. Here the pylorus is involved and probably also the duodenum. It is usually stated that carcinoma of the stomach, or a tumor of the stomach, is accompanied by vomiting whenever it affects the pylorus. There is usually no vomiting when the greater curvature alone is involved. When there is obstruction to the outward flow of material from the stomach, then there is regurgitation and vomiting. The rough diagnosis made two months ago is confirmed now, and in a very little while cachexia will begin to show itself in the general appearance of the patient. I would still advise the man to go into the hospital and prepare himself for a gastro-intestinal anastomosis which can be made, and which will somewhat prolong his life.

SEBACEOUS CYST.

This patient has a tumor at the left of the right nipple and at the right of the border of the sternum. The skin is quite red, in a state of inflammation, and is almost ready to break down. On pressure I find it fluctuates. It is about the size of an English walnut, and we learn that it has existed for a period of two years. I have not asked the question, but I should think it is not painful. It is painless, the patient says, although he complains of a little smarting from the effect of rubbing of the clothing on the tumor. The tumor has the feeling of soft cheesy material, and I have no doubt that it is a sebaceous tumor, the same as the sebaceous tumors that occur on the scalp. In this case it is on the breast. Here, as elsewhere, the cause of the tumor is due to the retention of sebaceous material in the duct at the root of the hair. It is a true cystic tumor. The duct becomes dilated by reason of the retention of the natural fluids in the duct.

The patient will now be prepared, and we will proceed to remove it by incision. I find it is confined to the skin, it is movable, and it will not therefore be necessary to go very deeply into it. The tumor can be removed in two ways, either by an elliptic incision including all of the diseased structure, or by a simple incision directly over it, turning out the sebaceous contents and then tearing out the sac from the underlying tissues with forceps, which is one of the easiest ways of removing a sebaceous cyst. The tumor is non-malignant. Here I am able to enucleate the tumor entire, with its capsule, with the handle of the scalpel. We now suture the little wound and expect primary union. The cyst will not recur after operation. The wound will be dressed with a little iodoform-collodion, after having made it perfectly dry with antiseptic gauze.

RACHITIS, GENU VALGUM.

The next case I present to you is a child, two years and six months old. In a case of rickets we generally expect delayed dentition. We have here a case of genu valgum, and it probably depends upon the general condition of rachitis. The chest-walls have in some way had their nutrition interfered with and are misshapen. It appears from the history of the case that the child had a febrile attack last winter. Now, the genu valgum in this case depends on two things: first, weakness of the tibia, and second, failure of growth of the external condyle of the femur. The internal condyle is distinctly longer than the external in this case, hence the operation proposed has been that of chiselling apart the longitudinal section of the internal condyle so as to slide the condyle in the direction of the incision, and thus straighten the joint. A linear osteotomy, or section of the femur just above the condyles, is a favorite operation for this condition. Remember that the tibia itself is perfectly straight in the majority of these cases, and so it is in this case. The tibia and fibula are straight. But there is here a decided lengthening of the internal condyle of the femur, this condyle failing to grow, owing to imperfect nutrition,

and we have the condition you observe. The other leg is straight.

The question of operation is rather a simple one. We divide the femur with a chisel above the condyles; in a short time an abundance of callus is thrown out, which lengthens the bone. I prefer linear osteotomy to the Ogston operation of making a longitudinal section of the femur. The bone can be separated with a few blows of the chisel, the wound united, and covered with iodoform-gauze. The limb is then fixed in proper position with plaster dressing. When recovery takes place the limb will be straight, and the patient be able to walk upon it. There is no chance about this operation, and the only mishap that could happen to the joint would be the non-union of the bone. It is not at all likely in a child of this age, and the ease with which the bone is controlled, as well as the upper shaft of the femur, is such that it is greatly to be preferred to separating the internal condyle.

CONGENITAL TORTICOLLIS.

Here is a case of congenital wry-neck, from shortening of the left sterno-cleido-mastoid muscle. A section would doubtless restore the neck to its normal position, and if there is no paralysis of the opposite side it would be indicated. That it is not due entirely to paralysis is evident from the fact that the head cannot be restored to its normal position without great traction on this muscle. It was probably paralytic in the beginning, but now there is contracture of the tendon. There is a little thickening about the center of the sterno-cleido-mastoid muscle, and doubtless an operation would restore it. (The operation was successfully performed a week later.)

ANKYLOSIS OF THE ELBOW-JOINT, WITH DISLOCATION OF THE RADIUS.

This man has ankylosis of the elbow-joint. He says he received an injury four weeks ago. The power of rotation of the wrist is lost, and there is inability to flex the forearm, and a distinct deformity at the elbow-joint. On examining the ulna, which we can do by tracing its posterior border, beginning with the olecranon, and following it down continuously to the styloid process, there is no break in the line, and no deformity in the ulna. The motion of rotation is mostly performed by the supinators and the pronators of the forearm, the supinator longus and brevis, and the pronator radii teres and the pronator quadratus. The principal action is upon the radius, the ulna being used as a fixed point, around which the radius revolves. The radius must be the bone involved. If it were a fracture, we should have some sign of callus, but there is none such here, except a thickening at the elbow-joint. You will notice how much wider the left elbow is than the right elbow. The injury therefore must have been at that point. My fingers rest on the condyles of the humerus, and the injury therefore has been to the condyles of the humerus, not to the bones of the forearm. We will further trace the humerus and the attachment of the triceps. Taking the olecranon as the starting-point, I grasp the humerus upon the sides, and I find a thickening. The injury has been to the condyles of the humerus, probably a fracture above the condyles, and splitting. At the same time there has been that curious condition which has so frequently failed to be diagnosticated at the time of the injury—*i. e.*, dislocation of the head of the radius—a condition that gives surgeons more trouble than any other form of injury about the elbow-joint. Very often I have seen elbows like this, when a fracture had been properly diagnosticated and set, but at the same time the dislocation of the head of the radius entirely escaped notice. We know the radius is dislocated, because we can trace the bone to a point anterior to the joint. We commence at the lower border of the radius, just as we did with the ulna, trace it directly upward, and we find it rests anteriorly to the joint. By means of a pair of calipers we can measure the difference in these two joints. I place my thumb on the head of the radius and a finger on the olecranon, and you see the difference is very marked. The head of the radius is out of place. To demonstrate this, I place my thumb on the projecting part, and then rotate the wrist. The bone rotates under my thumb. There is now no relief for this condition, except cutting out of the head of the radius. The only time to reduce it was immediately after the accident. I shall operate on a patient at the Marine Hospital for the same condition in a few days, but it has existed for a much longer period. The condition is one of permanence; it will last this man through life, as it is impossible to reduce it at this time, on account of the thickening that has gone on; an exudate has been thrown out, and there has been consolidation of it. There is contracture of the tissues about it. I advise this patient to submit to excision of the head of the radius.

CLINICAL MEMORANDA.

TWO CASES OF CONGENITAL HYPERTROPHY OF THE FINGERS.[1]

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CONGENITAL hypertrophy of the fingers or toes is stated by Bradford and Lovett[2] to be "a condition which is occasionally encountered, but which is decidedly rare. It is, perhaps, noted at birth that one digit is larger than the rest, and with the growth of the hand, this abnormally large finger remains proportionately the same, growing more rapidly than the other fingers. It is a hyperplasia of all the structures, although sometimes more marked in the muscular and areolar tissues than in the others. The arteries going to these fingers are larger and the temperature higher than in the normal fingers."

CASE I.—Gertrude P., aged eighteen months, came under observation February 24, 1893. The family history was excellent excepting that a first cousin, a female on the paternal side, had webbed fingers of one hand.

This child was born with the index and middle fingers of the right hand distinctly larger than those of the opposite hand. During the first year of life these fingers did not appear to increase in size much more rapidly in proportion than did their fellows; but during the past

[1] Read before the Orthopedic Section of the College of Physicians, Philadelphia, January 19, 1894.

[2] Orthopedic Surgery, p. 532.

six months the rate of growth in the diseased digits has received great impetus. The mother states that the increase during this latter period has been both actually and relatively very great as compared with the preceding six months. An interesting possibility of maternal impression is connected with the history of this case. When two months pregnant of the child under consideration, the mother was sitting in a street-car holding the index and middle fingers of the right hand within the grasp of all the fingers of the left. Some accident happening to the horses, she squeezed the two fingers of the right hand immoderately for some minutes with the left hand. For some time afterward the squeezed fingers were more or less palsied and the seat of much pain. From that time she was fearful that she had in some manner injured the child, and although she had not distinctly announced her belief that the corresponding fingers of the child would be the seat of defect, yet she was certain that some harm had come to the embryo.

Case I.

Case II.

Excepting the diseased fingers the child is absolutely healthy and well developed in every respect. The overgrowth begins immediately beneath the metacarpo-phalangeal joints, these being practically normal. The bony phalanges are hypertrophied. The interdigital joints are loose and permit of some lateral motion. Flexion for more than one-half of the normal extent is impossible. The terminal phalanx of each affected finger is especially prone to excessive extension. The articulating surfaces of the inter-phalangeal joints, as well as the ligaments, are evidently defectively evolved. Power of movement in the fingers is limited. Flexion is very weak, but extension is comparatively strong. Voluntary lateral movement of the digits is practically absent.

The tissues present a swollen and edematous appearance of hypertrophy, although no pitting takes place upon pressure being exerted. To the touch these tissues feel similar to the overgrowth of skin and cellular substance produced by long-continued congestion of a part. The skin is thin and mottled red, especially upon the flexor surfaces. Sensation appears to be normal. A thick web connects the two diseased fingers as far forward as the second inter-phalangeal articulations. The following comparative measurements were taken: Length of right index finger from metacarpo-phalangeal joint downward, 2¼ inches; of the left, 1½ inches. Right middle finger, 2½ inches; left, 1¾ inches. Circumference at second joint of right index, 2¼ inches; at same point of left index, 1¼ inches; same point on right middle finger, 2½ inches; left, 1¼ inches. The nails of these fingers are enlarged proportionately to the size of the digits, but have a defective, unfinished appearance.

The child had been treated at various times by elastic compression, liniments, sorbefacients, and other measures, without the slightest benefit.

Amputation presenting the only hope of relief, I accordingly removed the fingers at the metacarpo-phalangeal articulation by antero-posterior flaps. A large pad of fibro-fatty tissue was also dissected out from the palm. The parts were exceedingly vascular and a number of catgut ligatures were required. A continuous silk suture, dressing, and splint completed the procedure. Primary union throughout resulted in a very few days. At last accounts the whole remaining portion of the hand was in normal condition.

A dissection of the removed members showed that hypertrophy and degeneration were present in all of the structures of the fingers, and a microscopic examination made by Dr. Charles W. Burr demonstrated that

this hypertrophy was due to a tremendous increase of the adipose and connective tissue.

CASE II.—The child, Martha E. S., is twenty-two months of age. There is no history of a maternal impression, and the family history is negative. Several other children are normal. This child was born by breech-presentation and was almost asphyxiated by the cord being wound around the neck. There was a deep and well-defined groove encircling the left forearm below the elbow, which has grown more shallow, but still is quite prominent and well defined. Below this, great lividity of the forearm and hand persisted for some weeks after birth, but is now confined to the fingers and back of the hand. The arm below the groove was studded with very hard nodules, varying in size from a pea to a small egg. These at first appeared to be attached to the bones, but at the end of a year had all become freely movable. One large hard nodule was also present above the elbow and attached to the humerus. This has entirely disappeared. The condition of all of the affected parts has been slowly improving and at the time of my examination only the fingers and metacarpophalangeal regions are affected with lividity and hypertrophic nodules. There is also a condition of cavernous angioma affecting the fingers and thumb in spots, while in some places dark blood balloons out the thinned integument. Motion and sensation are perfect throughout. The bones, joints, and muscles are unaffected; the skin, subcutaneous vessels, and adipose connective tissue alone being diseased. The palm also is unaffected.

Under elastic pressure and constant application of 10 per cent. of ichthyol in lanolin, marked improvement has taken place in six months and ultimate disappearance of the hypertrophic nodules appears probable. The cutaneous circulation has also markedly improved and the angiomatous condition is disappearing. The groove upon the forearm is likewise growing smaller.

CONGENITAL HYPERTROPHY OF THE FOOT.

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A DIAGNOSIS of congenital hypertrophy must not be lightly made. In some cases atrophy of other parts may cause a simulated hypertrophy of corresponding structures. This is particularly true in hemiatrophy affecting one-half of the face or of the body. Cases of this condition have been reported by Osler, Bradford, Stanley Boyd, C. H. Golding-Bird, and others. It is no doubt of central origin, and may be analogous to infantile paralysis, as suggested by Golding-Bird.[1]

Hypertrophy of a part of the face does occur, however. Stanley Boyd[2] reports a case of enlargement of the left half of the face below the zygoma, including the tongue and the inferior maxilla. D. W. Montgomery[3] also reports a case of hypertrophy of the left side of the face.

Pseudo-hypertrophic paralysis can usually be recognized with accuracy. It is a primary disease of muscle, and, while it may be congenital, it follows a definite course, and is accompanied or followed by a definite weakness or paralysis. Akromegaly is a general disease, not congenital, developing usually in adolescence, and slowly progressive. It involves several portions of the body at the same time, as the hands, head, feet, tongue, lower jaw, or thorax. There is said to be invariably a spinal curvature.

Angiose enlargements should be possible of discrimination by touch and general appearance, including color and the presence of enlarged vessels. Myxedema is a disorder that is limited to soft tissues, and is usually progressive.

Various arthropathies of central origin must be excluded. There is also a rare form of hypertrophic osteoarthritis which develops in connection with certain pulmonary conditions, such as empyema.

A number of diseases of the skin are classed as hypertrophies by dermatologists, such as ichthyosis and

elephantiasis Arabum. Among these, sclerema neonatorum is one that in the infant might give rise to confusion. It is described by Duhring as appearing usually at birth, and consisting of a diffused stiffness and hardness of the cutaneous and subcutaneous tissues, accompanied by coldness, edema, swelling, discoloration, lividity, and general circulatory disturbance. It is usually fatal.

In regard to the surgical treatment of true hypertrophies, little need be said. The tissue is often of such a character as not to lend itself readily to plastic work, owing to deficient nerve-supply and blood-supply. Frequently but little can be done, owing to the diffuse nature of the enlargement. Those progressive diseases that are of central origin are not amenable to operative treatment.

The case herewith reported is that of a girl, aged nineteen, from a mountainous region in this State, one of fourteen children, of whom one had a supernumerary thumb, this being the only significant point of family history

[1] Guy's Hosp. Rep., xlvii, 1890.
[2] Internat. Med. Mag., Nov., 1893.
[3] MEDICAL NEWS, July 15, 1893, p. 61.

obtainable. She has a history of frequent attacks, apparently of hystero-epilepsy, during the past three years, not directly connected with menstruation. This function, however, has been very irregular for the same period, dating from a severe illness of nearly four months, attributed to overeating ice-cream during the flow. Dysmenorrhea is severe, the pain preceding the flow. The patient has hypermetropia and an internal strabismus of the right eye. Few individuals would appeal to so many specialties in medicine.

The deformity, which was noticed immediately after her birth, affected the outer portion of the left foot, as seen in the accompanying photograph, which shows both feet. The girl was large and well formed, with a well-developed muscular system. The only asymmetry above the ankle, beside the strabismus referred to, was in the calves of the legs, the left being ¾ inch larger in girth than the right. This is a true asymmetry, for the right calf is usually larger than the left in right-handed persons. Owing to the marked dysmenorrhea and the possible relation of the epileptoid convulsions to pelvic disease, a thorough examination was considered justifiable, and was made during the anesthesia induced for the operation on the foot. The uterus was small, almost infantile, measuring 1½ inches. There was no ovarian or tubal abnormality. A firm band of connective tissue, ¼ inch wide, crossed the vestibule from a point immediately behind the urethral orifice to the posterior vaginal wall, somewhat to the right of the median line. It appeared to lie behind the hymen.

The deformity of the foot, as will be seen in the photograph, began just below the external malleolus and involved bone, muscle, and skin. The three outer toes were affected, together with their metatarsals, the outer three-fifths of the sole of the foot, and a corresponding portion of its dorsum. Aided by a firm pad, covered with callus, on the sole, the thickness of the foot was increased nearly three times; the length was increased about one inch by the hypertrophy of the outer toes, while the great toe and the second were normal, as were all the corresponding structures on the inside of the foot.

The skin gradually changed from the normal upon the dorsum over the second metatarsal to dense, hard, immovable tissue over the toes and the outer edge of the foot. It was normal in color and smooth, except for the thick callus upon the sole. The toes were particularly hard and inelastic, and it was evident that the tissues underlying the skin were very hard also, and that the disease was not simply a skin-lesion. Inspection and palpation excluded an angiose enlargement; a true scleroderma is an atrophy and not a hypertrophy. Elephantiasis was out of the question. Dr. Milton B. Hartzell kindly saw the case with me. Having carefully excluded akromegaly, or other disease of nervous origin, and the opinion that it was a simple hypertrophy being confirmed on consultation with Dr. J. H. Lloyd, it was determined to retrench the foot.

The girl was obliged to work for her living, and it was not thought wise, for appearance' sake, to weaken the foot by removal of metatarsals or other essential structures, particularly as there was some risk in obtaining a good operative result.

It would have been impossible to operate through sound tissue and secure good flaps without removing all of the distal half of the foot except the great toe. The vitality of the tissues was considered very low, and the result vindicated the opinion. The two outer toes were therefore amputated where they joined the metatarsals, and the third toe in its continuity. An incision along the outer edge of the foot enabled a large flap to be laid off the sole, when all the hypertrophied subcutaneous connective tissue was removed which it was considered safe to disturb without endangering the plantar flap. The skin appeared to be about one-half an inch in thickness and extremely tough. The muscular tissue exposed was pale and rather soft. The abductor minimi digiti and the short flexor were much enlarged, and were removed in great part. The outer metatarsal was distinctly enlarged. All vessels were tied with catgut. The parts, particularly the skin, did not appear to have even a normal vascular supply, yet the general oozing, though slight, was continuous. This was due to the great hardness of the flaps, which prevented the usual contraction of the capillaries and the shrinking of the tissue under hot water. This oozing continued for ten days, filling the wound-cavity and soiling several dressings. Fortunately the wound remained aseptic throughout its course, and free drainage was provided; but about half an inch of the edge of the upper flap slowly separated by a sort of dry gangrene, requiring several weeks in the process. It was meanwhile a source of congratulation that no essential portions of the foot were uncovered, as might have been the case had a more radical excision been performed.

The final result was excellent. Though still somewhat broader than the other foot, the great improvement was very satisfactory to the patient, who writes, after the lapse of several months, that further shrinkage has taken place. The nervous condition present was of much interest, and received careful study by Dr. Lloyd. The convulsions were general, with well-marked opisthotonos. After the foot had healed these convulsions increased in frequency, twenty or more occurring every day, so that the general health suffered. It is of some interest to recall that there were several other hysteric cases in the same ward, so that it became necessary to isolate the girl. As has been said, these attacks had occurred for several years previously.

While under the anesthetic rapid dilatation of the cervix was performed, with the hope of stimulating the nutrition of the infantile uterus and of possibly favorably affecting the dysmenorrhea. Apparently this was not accomplished while the case remained under observation. No further gynecologic treatment was considered wise.

An interesting point is the situation of the hypertrophy on the outer border of the foot. Charcot has called attention to the fact that it is the little-finger side of the hand that is usually involved in such processes in the upper extremity, and the analogy is followed in this case.

MEDICAL PROGRESS.

The Conduct of Ordinary Labor through External Examinations Solely.—Leopold and Spörlin (*Archiv f. Gynäkologie*, B. xlv, H. 2, p. 337) make a warm plea for limiting examinations made in the course of ordinary

labor to the external parts, and adduce the advantages of such a course. Infection is thereby avoided; the natural sense of modesty of the parturient is not offended; and careless rupture of the membranes is avoided. Skill in external examination is acquired with reasonable readiness. In the large majority of cases such examination alone is sufficient for the recognition of the position and presentation of the fetus, and for the study of the course of an ordinary labor. As there can be no objection to its frequent exercise, abnormalities of parturition may the more readily be detected early, and means of correction promptly employed. Experience soon teaches the difference in the position of the fetus assumed in case of pelvic contraction on the part of the mother. The position and presentation having been recognized by external examination, internal examination for the determination of possible pathologic conditions of the birth-canal need be but brief, and can be conducted with great care. For the attainment of this desirable result it is essential that the obstetric pupil familiarize himself thoroughly with the conditions of normal labor as determined by physical external examination, as well as with the physiology of normal labor. Obstetric operations are principally to be taught upon the phantom.

The Effects of Ligature of the Coronary Arteries.—MICHAELIS (*Zeitschr. für klin. Med.*, B. xxiv, H. 3, 4, p. 270) has confirmed the observation that ligature of the coronary arteries of the dog is as a rule followed in the course of two minutes by irreparable cessation of the action of the heart. The loss of blood or the reduction of temperature consequent upon the operation does not suffice to bring about this result; but these, on the contrary, render the animal the more resistant and defer the cessation of cardiac action. There is a difference in reaction to ligature of the coronary arteries between rabbits and dogs; in the former *restitutio ad integrum* may be brought about after the heart has ceased beating by massage of the heart, while in the latter this seems impossible. The coronary arteries of the dog anastomose with one another. The explanation of the much slighter influence exercised upon the action of the heart by complete ligature of the veins (in the sequence of which irregularity of cardiac action does not appear before an hour), as compared with the effects of ligature of the arteries, is to be found in the considerable flow of venous blood through the foramina Thebesii directly into the cavities of the heart and the consequent entrance of fresh blood through the coronary arteries. Ligature of the coronary arteries is followed by pulmonary edema.

Seborrheic Eczema is discussed fully in a recent monograph by UNNA (*Sammlung klinischer Vorträge*, New Series, No. 79, Leipzig, 1893), who was the first to direct special attention to its peculiarities five or six years ago. The affection is characterized by (1) parakeratosis of epidermis; (2) epithelial proliferation; (3) inflammation of the corium, variable as to depth; (4) augmentation of the fatty secretion of the skin, together with increased activity of the sweat-glands. The disease is microbic in origin, and Unna believes that he has defined two species of organisms, the flask-bacilli (Malassez's spores) and the morococci (mulberry cocci), the former being found chiefly in the crusts and scales of the scalp, the latter in the scales of the body, especially if moist. [Seborrhœa oleosa is regarded by Unna as being due to an affection of the sweat-glands or coil-glands, and as being therefore really a hyperidrosis.] In typical cases the scalp is first attacked, the disease usually occurring between the ages of twenty and thirty. When the hairless regions are involved the diagnosis is not so easy, but the sternal region and the back between the scapulæ are favorite localities. Cleansing the patches with spirit of soap, and the use of ointments of sulphur, constitute the best remedies and are generally effective in curing the disease, though relapses are common.

Allocheiria in the Sequence of Diphtheria.—GAY (*Brain*, part lxiii, p. 431) has reported the case of a girl, thirteen years old, in which four or five weeks after the onset of an aggravated attack of diphtheria fluid regurgitated through the nose, and the voice was extremely shrill and almost reduced to a whisper. Near vision became deranged and diplopia supervened. The pupils were dilated, and reacted feebly to light and in accommodation. The internal recti were paretic. There was no actual paralysis, but a generally distributed weakness. The gait was faltering; station was unsteady; knee-jerks, elbow-jerks, and chin-jerk, as well as the cutaneous reflexes, were abolished. There was considerable ataxia in all four extremities. The sense of hearing, and probably also that of taste, was preserved, but the sense of smell was lost. Slight touches were not perceived, but firmer ones were referred to exactly corresponding points on the opposite side of the body. There was no delay in the transmission of sensory impulses and no polyesthesia or paresthesia. Heat was well discriminated from cold, but the muscular sense was lost in all four extremities. The soft palate was only slightly paretic, but a laryngoscopic examination could not be made. The symptoms gradually ameliorated, and the child was in a little while on the way to recovery.

THERAPEUTIC NOTES.

Salicylated Collodion for Lupus.—SYMPSON (*Practitioner*, No. 308, p. 96) reports the successful employment of the following formula in the topical treatment of lupus vulgaris affecting the skin:

R.—Acid. salicylic. . . . . 5j.
Ext. cannabis indicæ . . . gr. x.
Collodii flexilis . . . ad 5j.—M.
Fiat pigmentum.
S.—Apply topically.

Ammonium Bromid for Tetanus.—NATH (*Indian Medical Record*, vol. vi, No. 2, p. 47) has reported three cases of tetanus treated successfully by the administration of 20 grains of ammonium bromid thrice daily. Two of the patients were kept in a dark room during the progress of the treatment. In one case the condition arose in the sequence of injuries received from the bursting of a gun; in another following an axe-wound; and in the third after a crushing wound by a falling building.

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SATURDAY, MARCH 17, 1894.

CARE OF THE INSANE.

In 1869, the Legislature of Pennsylvania created the Board of Public Charities, consisting of five members, and intrusted it with general visitorial powers. In 1883, there was additional legislation, and an act was passed "Relative to the supervision and control of hospitals or houses in which the insane are placed for treatment or detention," which provided for an addition of three members to the Board, which was further authorized to appoint from its own number a committee of five to act as the "Committee on Lunacy." As we understand the law, while large powers are conferred upon the Lunacy Committee it does not possess complete autonomy, and this may have been purposely withheld. The law of 1883 has now been in operation ten years, and through the medium of its annual reports its work is well known. Of this it may be said at once that what has been accomplished is, on the whole, most gratifying. Some of the results and tendencies of the operation of this law, and other legislation relative to the care of the insane enacted the same year, deserve notice at this time.

Aided by the provisions of the new law, and encouraged by a favorable public sentiment, efforts were begun soon after the organization of the Lunacy Committee to transfer the insane poor from the county almshouses to the State hospitals—in other words, to substitute State care for almshouse care of the insane. There was general acquiescence in the proposition to place the insane poor under State supervision. In September, 1892, excluding the counties of Philadelphia, Allegheny, Lancaster, and Lackawanna, which have organized institutions, there were only 250 insane persons remaining in sixty-four counties. It is creditable and remarkable that the change in the State policy has been made so expeditiously and with so little friction.

There does not seem to have been adequate preparation for the reception into the State hospitals of the large number transferred from the almshouses, in addition to the admission of new cases constantly developing throughout the State, and in the execution of the law one result was soon manifest, viz., the overcrowding of the hospitals beyond their intended capacity, and the refusal to admit fresh cases. The story of overcrowding comes from every one of these institutions, and it is easy to read between the lines of their annual reports that their operations as medical institutions are seriously impaired, if not paralyzed, from this cause alone.

In 1891, the Legislature, "at the suggestion of the Board of State Charities," authorized the Board to transfer, in its discretion, patients from the hospitals back again to the almshouses. The same year the Governor vetoed a bill to return the insane to the almshouses and appropriating money for their support therein. Among other things, Governor Pattison said: "I am satisfied the bill is a step backward, and I am not willing to reverse the progressive and humane policy of this Commonwealth by its approval."

It is stated that eighty have been recently transferred from the Harrisburg Hospital to county almshouses in accordance with an order of the Board of State Charities. This movement deserves a notice from the medical press and suggests the question whether these transferred patients go to almshouses any better equipped for their care than formerly. Also, does it foreshadow a return to a system which has been condemned by the humane sentiment of the people and by the Executive of the Commonwealth? If it is the beginning of a reactionary movement, then the medical profession should protest, and urge and strengthen the State Board in its efforts for measures for a continuing elevation of the standard of care for the insane of all classes, rather than by silence seeming to assent to a retrograde

movement which may reverse the policy of State care. Public and professional sentiment will hardly approve of a system which permits dangerous overcrowding of the hospitals, to the embarrassment and detriment of all medical management, and permits the incurable, the chronic, and the helpless cases to drift into the almshouses.

It may be an opportune occasion also to question the wisdom of a system that crowds the insane of all classes—the recent cases, the incurables, and dements of every social condition—into the same wards. The State hospitals must make provision for all of these classes, but facilities for classification may be much improved. There must come in the future the hospital department proper, where the small percentage of the total hospital population who are probably curable may receive the best hospital treatment, and all that it implies, without stint. There will be needed outlying blocks and supplemental buildings for chronic cases. There will be needed also infirmary wards for dements, feeble persons, and paralytics. The whole scheme should be elastic and comprehensive, so as to include the requirements of every class.

Notwithstanding all that has been done, hospital plans are still unsettled, and, as is well known by those who note the tendency of medical thought, are in course of evolution. In this connection, we take this occasion to call the attention of our readers to a most suggestive paper on hospital plans by Dr. Andrew MacFarlane, which appeared in the *Popular Science Monthly*, for October, 1893. We have also called attention to certain distinct reforms advocated by Dr. Stephen Smith, of New York.

THE PATHOLOGY OF LITHEMIA.

In a lecture recently delivered,[1] Prof. Da Costa gave a very lucid exposition of his views of the pathology of lithemia, and, taking these for a foundation, he indicated a line of treatment which certainly appears to be an eminently rational one.

The term "lithemia," as applied to a morbid state, involves much more than the presence in the blood of a mere excess of lithic or uric acid. Hence the proposition of the late Prof. Austin Flint to substitute for the older term the new one, "uricemia," or, even still worse, "uricacidemia," is to be condemned, as it implies that the efficient cause of the symptoms, as well as the leading indication for treatment, is to be found in the abnormal accumulation, or excessive production, of a single excrementitious element. Lithemia is a modified form of gout, and it is the form in which gout particularly manifests itself in this country. It is, in fact, "American gout."

Habitual indulgence to excess, especially in albuminoid food and alcoholic drinks, is manifestly the direct cause both of gout and lithemia. As every lithemic will testify, sugar is especially injurious; so also are all articles of food that are easily made to undergo the acid fermentation, as fermentative dyspepsia aggravates all the symptoms. Lithemia, then, is a morbid state in which the income of nutriment is in excess of the outgo of waste. The quantity of food is greater than either the needs of the system require or the organs of excretion can promptly dispose of. There is defective oxidation as well as deficient elimination. One consequence of the excessive ingestion of food is that the functions of the liver are imperfectly performed, and there is, generally, more or less hepatic disorder. The blood contains urates in excess, and frequently oxalates, also other imperfectly elaborated products of waste; possibly it may be yet further poisoned by ptomaïns resulting from imperfect gastric and intestinal digestion.

The urine of lithemia is, as a rule, dense, high-colored, and of higher specific gravity than normal urine; but spontaneous deposits of urates and uric acid are seldom observed. Small quantities of albumin may sometimes be found; even tube-casts, both hyaline and epithelial, may be discovered; but usually these are transitory and do not indicate permanent kidney disease.

Another point of difference between lithemia and gout is the clinical fact that in the former deposits of urates in the vicinity of joints are not observed, and attacks of acute arthritis of toes or fingers do not occur. There may be, however, a painless enlargement of the terminal finger-joints, especially in elderly people, with impairment of function. The cardiac hypertrophy and kidney-degeneration of true gout do not belong to the clinical history of lithemia. The blood-tension may be increased, but it is so to a less degree than in gout, and the arteries do not exhibit the atheromatous condition that characterizes the graver form of disorder.

As the organic lesions are slight, the prognosis

[1] Lecture delivered by invitation before the medical classes, in the Medical Hall of the University of Pennsylvania, March 6, 1894.

is correspondingly favorable, provided the symptoms are properly interpreted and a rational treatment is instituted.

The symptoms of lithemia have been so well described by the same skilled hand, in previous contributions to the literature of this very interesting form of disease, that they should be familiar to all. There is the impaired digestion, the muscular pains, the neuralgic attacks, and pains in the tendons (notably in the tendo Achillis), the indisposition to exertion, the lack of ambition, the irritability of temper, the depression of spirits, and the general gloom, the frequent and severe attacks of vertigo and of migraine, the restlessness, with jerking muscles, at night, and the drowsiness during the day—all of which combine to make the life of the poor lithemic far from a happy one.

The tendency to lithemia may be acquired in the manner already sufficiently indicated, or it may be inherited from gouty or over-fed ancestors.

The suggestion of Dr. Wm. Roberts regarding the formation, under such circumstances, of the less soluble biurates in place of the more soluble normal quadriurates, is a plausible and probably the true explanation of the phenomena of gout; but, like Haig's uric-acid theory, it is too restricted and does not sufficiently account for the phenomena of lithemia. A neuro-humoral hypothesis similar to that proposed for gout by Sydenham appears, on the whole, to be more in accord wth the facts, the lithemic condition being due to faulty metabolism as well as to poisoned blood.

Keeping in view the pathology of lithemia as outlined, we are prepared for the statement that the most important factor in the treatment is the regulation of the diet. The food need not be strictly vegetable, but the nearer it approaches this standard, the better for the patient. Green vegetables (except asparagus), fresh fruits, stale or toasted bread, with the white meat of poultry and fish, should constitute the main reliance. An excess of carbohydrates, especially sugars, should be avoided. The only drink allowed should be water, which should be taken in sufficient quantities to keep the kidneys active. Mineral waters may be ordered to accomplish the same purpose. Alcohol should be positively excluded, except that elderly patients, who have been all their lives accustomed to the use of stimulants, may have whiskey or a good, sound claret with their meals. Exercise in the open air is also an important part of the treatment. As regards the purely medical management of the lithemic state, too much physic is to be avoided. Saline laxatives are very useful. A combination of lithium carbonate (gr. ij.) with extract of nux vomica (gr. $\frac{1}{6}$) given after meals is of special value. In attacks of lithemic migraine, a few doses of a mineral acid, it is claimed, will often cause the symptoms to disappear. An important point of treatment is to watch the digestive organs and scrupulously avoid food that causes fermentation, with the consequent production of an excess of acid in the stomach.

THE STUDY OF IDIOCY AT ELWYN.

It has long been recognized by a few specialists in this city that the opportunities for the scientific study of idiocy at the Pennsylvania Training-school for Feeble-minded Children, at Elwyn, were unparalleled in this country, and perhaps not excelled in the world. It has been equally recognized that these opportunities have not been utilized in the past as thoroughly and systematically as could have been wished. It is not necessary or pertinent to enter now into a discussion of any possible causes that may have conduced to this. The labor of organization in a comparatively new and rapidly-growing institution, and the ever-present duties of administration, seemed in this, as in so many of our American asylums, to rise up, like Jonah's gourd, and spread out and obscure all the other interests. The scientific work at best was sporadic, and while it was excellent in its way, it was confined rather too exclusively to desultory papers and to annual reports. The fact that the most notable scientific production of the institution in all its history was the work of an outsider suggested, to some minds at least, that the opportunity to do such work ought to be offered more liberally to scientists who were not directly connected with the school, and who could bring to its service from beyond its own walls the skill and attainment of trained experts in both pathology and clinical medicine. Whatever obstacles existed to such a plan seem in the course of time to have been eliminated, for at their recent meeting the Board of Directors, with a liberal and enlightened policy fully abreast of the spirit of the time, appointed a full staff of neurologists, physicians, surgeons, and specialists to take up the scientific work. It is thoroughly understood by both the Directors and the members of the new staff that the duties of the latter are in no sense to be merely perfunctory, but that these consultants are not only to

participate in but also to lead and direct the practice and the researches undertaken in the school.

We think that this ought to inaugurate a new era in the study of the pathology and treatment of idiocy in this city. That this great institution, lying almost within the suburbs of Philadelphia, and ministering to the wants of almost one thousand feeble-minded children, should have contributed from out its rich storehouse so little to the advancement of science and to the reputation of this great medical center is an anomaly that we trust will not continue longer to be seen. With less material and opportunity the reputation of some European schools has been made; from little if any greater field BOURNEVILLE has contributed his annual volumes to the elucidation of this most important specialty. The necessity for a too exclusive attention to the labor of organization no longer exists to the same degree as formerly, and can be met by the Board to whom it properly belongs, while the details of administration will be wisely distributed among officials who are not responsible for the scientific work.

The subject of idiocy still offers many problems of the first importance both to the pathologist and to the sociologist. The prevention and treatment of feeble-mindedness can never be thoroughly established until the pathologist masters the subject more thoroughly than at present. The relations of idiocy to heredity, to the various dyscrasiæ and toxemiæ, to the complications and accidents of childbirth, and to the infectious processes, are a few only of these problems. While to the humanitarian the care and education of the imbecile brain may seem to be the prime object, to the sociologist the regulation and control of those evil forces conducing to the production of this sad social blight will ever be paramount. These varied and far-reaching problems, social, humanitarian, and scientific, all come to a focus in such an institution as that at Elwyn. It is hoped and believed that the liberal policy now inaugurated by the Board of Directors will be justified by the fruits of a wise and thorough scheme of scientific work.

EXTIRPATION OF THE LARYNX.

EXCISION of the larynx is not being practised as frequently as it was a few years ago. One or more operators of large experience have expressed themselves in its disfavor, arguing that the disappointments in regard to the safety from recurrences of malignant disease in the tissues whence the extirpation has been made, and the short average of life thereafter, do not justify the risks taken in submitting to the excision.

On the other hand, a few exceptional cases have recently been reported in which the immediate and prospective success has been unusually favorable. In these cases attempts have been made to avoid the danger of escape of food, saliva, mucus, and débris into the air-passages, by the device of stitching the orifice of the severed trachea to the skin in such manner as to cut off all communication with the wounded tissues.

More than this has been accomplished; for by stitching the trachea in this way a large permanent orifice is obtained, so that a tracheotomy-tube or other canula is dispensed with; and thus a serious source of irritation is circumvented, *i. e.*, irritation due to the presence of a foreign body in the wound. The recoveries from operation have been more prompt than formerly, and the periods at which food could be taken in the ordinary manner much earlier. Indeed one case at least is on record in which food was satisfactorily swallowed immediately after the operation.

Furthermore, in some of these cases there has been no attempt to substitute an artificial larynx for the organic one, and yet attempts to speak with the structures as they have been left or have become modified during cicatrization have culminated in the production of voice far superior to that produced by an artificial appliance.

May it not be that the withholding of foreign bodies from the wound will render excision of the larynx more encouraging in the near future?

EDITORIAL COMMENTS.

The Retort Courteous.—In the *Journal of the American Medical Association* for March 10, 1894, occurs the following editorial utterance:

"CAPTIOUS CRITICS.—We are naturally pleased to see the great interest taken in the articles from time to time published in the *Journal*, but when the editors of other journals pervert friendly interest to carping criticism on what we do *not* publish, we have a clear right to invite their attention to a homely adage which reads, '*Mind your own business.*' It is with sincere regret that we apply the invitation to the editors of the PHILADELPHIA MEDICAL NEWS and the *Pittsburg Medical Review*, but their bad manners in attacking Dr. Woodbridge, a valued contributor, and a worthy member of the Association, for daring to divide his article in two parts; and attacking in savage strain the editor of this *Journal* for presuming to publish the same (also in two parts), seems to show a desire to find fault, as ridiculous as it is senseless."

Our contemporary is as courteous as it is truthful, and as truthful as it is courteous; and we should feel derelict did we fail to acknowledge in a befitting manner its courtesy and its truthfulness. In order to exhibit still more fully the heinousness of our offence and the offence of our always outspoken contemporary of Pittsburg, we must point out a fact or two that have escaped the memory of the *Journal*.

In its issue of February 10th was published a paper entitled "Can Typhoid Fever be Aborted?" read by J. E. Woodbridge, M.D., before the Mississippi Valley Medical Association, October, 1893. This paper claimed that a certain treatment of typhoid fever, original with the author, was infallibly curative, and frequently aborted the disease. We patiently read and re-read every word of the paper to find some intimation of the nature of the treatment, or some promise to publish the treatment later. We searched carefully through the editorial columns of the *Journal*, to find some allusion to this omission, some intimation that it would be rectified. Strange to say, we were unable to find either in the paper or in the editorial columns, what was not there, and our Pittsburg contemporary seems to have been equally unfortunate. Had we been possessed of "second sight," as was clearly our duty, we would have known that the "second part" of a paper apparently finished and read at Indianapolis, Ind., in Oct., 1893, and published on Feb. 10, 1894, was to be read in Mahoning Co., Ohio, on Feb. 12, 1894. We cannot refrain from expressing our admiration of the editorial brilliancy which places as a heading over this "second part" (which, however, the author terms "second paper"), read at a different place and time from the "first part," the words: "Continued from page 187, February 10, 1894." This is a new departure in journalism, as bold as it is unlikely to be imitated.

We are sincerely glad that Dr. Woodbridge, by this second paper, and the *Journal* by its publication, have in so far redeemed their characters. We forbear to comment upon the second paper, believing its peculiarities to be due more to error of judgment than to wrong intent. We are rejoiced to find the *Journal* becoming sensitive to criticism, as this is an indication that it may finally learn that the Association owns the *Journal* and that the *Journal* does not own the Association.

We trust, moreover, that the lesson of the whole "*ridiculus mus*" will not be lost on editors and authors in general. Notwithstanding the apparently condoned aberrations of many men, the profession, as represented by the American Medical Association, is devoted to the principles of right conduct embodied in the Code of Ethics, and no one can long transgress them without being called to account. Even those who succeed in obtaining position and influence while violating the Code, have, after all, but the wirepuller's success; they have neither the esteem, the respect, nor the confidence of those whose good opinion is to be desired.

A Study of Dietaries.—As the mode of life, and particularly the food-supply, of a community has a most important bearing upon general and individual health and length of life, the results of some observations detailed in a study of dietaries recently made under the auspices of the College Settlements Association are of more than ordinary interest. The observations were made partly in Philadelphia and partly in Chicago, and include some fifty individual dietaries. Among other things, the theory that man's natural appetite, when not controlled by extraneous circumstances, leads him to take the food that supplies all the nutritive elements that he needs, and in about the right proportions, was corroborated. In twenty-three dietaries it was found that an average of 21 per cent., by weight, of all the food consumed was bakers' bread, which is usually raised excessively, dries quickly, and lacks nutritive power, so that the diet of a majority of persons in any large city would be improved by providing bakeries where good whole-wheat and white bread could be bought at reasonable prices. To the same end, a taste for good home-made bread should be cultivated to as large an extent as possible. The cost of living is increased among the poor by the necessity of having to purchase the raw materials in small quantities. Besides, however, some of the excess of cost is due to lack of intelligence in purchasing and want of knowledge as to the nutritive values of different articles of food. It is pointed out that by a more general use of peas, beans, cornmeal, and the cheaper cuts of meat, dietaries can be cheapened as to cost, and at the same time increased in nutritive value. It is admitted that to work with individuals to bring about improvements in these respects would be an arduous and lengthy task, and it is believed that the most effective and rapid way to accomplish the desired result of rendering attractive and palatable inexpensive yet nutritious fare for working people, indeed, for all persons, is through kitchens and restaurants, as the New England Kitchen in Boston and the Hull House in Chicago, where such dishes as the best scientific and practical knowledge of the day can produce are served, or sold to be taken home. In connection with such kitchens there might also be lectures on cooking and centers for the sale of raw materials of food of the best quality.

We have before alluded to the noble work done by the College Settlements Association, and the encouragement and aid physicians may give this body in its labor for the hygienic and social progress of the crowded poor of great cities. The Secretary, Mrs. Florence Y. Humphries, 2348 North Twenty-first Street, Philadephia, will answer inquiries and supply literature on request.

Infection through Cigars.—Attention has been directed from various quarters to the possibility of transmitting disease through cigars, which receive a good deal of manipulation in the process of manufacture. It is not uncommon for the unfinished product to be taken into the mouth and a small portion bitten off, while the saliva is often used, applied either directly by the tongue or lips or by a finger. In illustration of this risk we need but refer to a report of two cases of labial chancre in cigar-makers contained in THE NEWS of July 15, 1893, p. 68. It can readily be understood that tuberculosis might likewise be transmitted in the same way. Investigations undertaken by a Roman physician tend to show that this channel of transmitting tuberculosis is restricted by certain limitations. Thus, cigars made in the usual manner, but moistened with saliva known to contain tubercle-bacilli, were by inoculation-experiments found to have lost their infectiveness ten days after

having been dried and packed in the ordinary way. While the risk of infection thus appears to be minimized, it is none the less a real one, and measures restraining the use of the saliva should be rigidly enforced. Further, in the selection of cigar-makers we should consider justifiable a preference for those free from all infectious disease.

Two Portals of Entry for the Tubercle-bacillus.—There are not a few cases of tuberculosis in which the source and route of infection elude detection. Boulland (*Limousan Méd.*, No. 9, p. 129; *Revue de la Tuberculose*, 1893, No. 4, p. 367) calls attention to two possible channels of communication which have hitherto received little or no consideration. The exposed cavity left in the gum after a tooth has fallen out spontaneously or has been removed surgically presents an absorbing surface capable of affording lodgment for tubercle-bacilli that may be present in insufficiently cooked tuberculous meat or other food. Under these circumstances tuberculous involvement of the glands of the neck may be the first indication of infection. The second mode of infection is by the entrance into the ear of the child during labor of blood of the mother containing tubercle-bacilli, with the development subsequently of a tuberculous suppurative otitis, which may in turn lead to general infection. It thus becomes a wise precaution to irrigate with an antiseptic solution the ears of children born of tuberculous mothers.

The Laws of Alabama, as we are informed, protect a physician of that State in his practice and in publishing the following advertisement:

Wanted.—Healthy left male arm from shoulder down; subject must be white and between twenty-five and thirty-five years old; arm to be amputated two inches below shoulder-joint and grafted on another man's body. Will pay handsome price. Apply to the surgeon, Dr. ———, ——— Street, Birmingham, Ala.

The methods of treatment of this individual are thus described:

He cuts two deep incisions in the back for headache, taking a poor man's horse in part of a fee of $200 therefor. He punctures the cornea of an eye that is wholly lost, gouges about in the globe, saying "the sight would be entirely restored by thus stimulating the optic nerve"—for which his charge is $25 in advance. His office is crowded at all times.

Untrustworthy Reports of Medical Facts are the most common things in the daily papers, but when echoed in medical journals severe editorial responsibility should come into play. An instance has lately occurred. Some joking newspaper reporter, finding his "reports" of facts all too small, took it into his head to record the birth of quintuplets at Kittanning, Pa. Our only wonder is that he didn't credit Mrs. Rosenberger with six or eight instead of five children as the result of a single labor. But the quintuplets aroused our suspicion, and we wrote to a reputable physician of Kittanning as regards the truthfulness of the report. He replied that he knew the Rosenberger family well, and that the whole story was absolutely without foundation. The lady had never even borne twins, and no child within the past year. Despite this, medical journals are solemnly repeating the story, and obstetric statistics will be falsified by it to the end of time.

REVIEWS.

The National Dispensatory. Containing the Natural History, Chemisty, Pharmacy, Actions and Uses of Medicines, including those recognized in the Pharmacopeias of the United States, Great Britain and Germany, with numerous references to the French Codex. By Alfred Stillé, M.D., LL.D., Professor Emeritus of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania; John M. Maisch, Ph.M., Phar.D., Late Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy, Secretary to the American Pharmaceutical Association; Charles Caspari, Jr., Ph.G., Professor of Pharmacy in the Maryland College of Pharmacy, Baltimore; and Henry C. C. Maisch, Ph.G., Ph.D. New (fifth) edition, thoroughly revised, according to the new United States Pharmacopeia (7th Decennial Revision, 1894). 8vo, pp. 1910, with 320 illustrations. Ready Reference Thumb-letter Index. Philadelphia: Lea Bros. & Co., 1894.

The publishers of this great work may justly pride themselves upon its issuance five months after the publication of the new Pharmacopeia, and but one month after the date assigned for the latter to go into effect. The sweeping changes of the new official standard have been thoroughly incorporated, additions have been made from the latest editions of foreign pharmacopeias, and ample space—in our judgment a little too much space—has been devoted to the new synthetic drugs and unofficial preparations. Many new tables have been introduced from the new Pharmacopeia and elsewhere. Weights and measures are given in both the ordinary and the metric systems, and for the convenience of pharmacists the official formulas have been given in reduced and convenient quantities, according to the customary apothecary's weights and measures. The editors state that in no previous edition have the alterations and additions been so great; that the pharmacists will find a full discussion of chemic and pharmaceutic processes, with descriptions and explanations of the most approved apparatus and tests; that the pharmacopeial formulas for galenic preparations have been freely commented on, and improvements suggested wherever such have seemed desirable. Dr. Stillé has contributed in the preface an appreciative note upon the character of his lamented colleague, Prof. John M. Maisch. The publishers state that prior to the death of Dr. Maisch, the latter had practically completed the portion of the work he had reserved for himself, while the remainder was intrusted by him to Prof. Charles Caspari, Jr., whose name, together with that of Dr. Henry C. C. Maisch, now appears upon the title-page.

The therapeutic portion of the work, that in which our readers will take the greatest interest, remains, as before, under the care of Prof. Stillé, and has been revised with his accustomed thoroughness. Dr. Stillé emphasizes, in his preface, the value of the empiric as contrasted with the dogmatic method of therapeutics,

contending that the practical physician must depend finally upon experience alone. In the Index of Therapeutics, under the name of each disease is a list of all the medicines employed in its treatment, and in the articles relating to each medicine are set forth the conditions calling for the employment of the remedy in question. There can be no doubt that, properly employed, the great mass of empiric knowledge to which attention is thus directed must prove of great service in the management of cases of disease, yet it is obvious that a high degree of critical judgment must be brought to bear in estimating the value of the recommendations of the various observers quoted, and that one may sometimes be confused by the very richness of the material placed before him. For instance, under Leukorrhea we find a list of 113 remedies; for Gravel, 57 drugs are tabulated, and so throughout the list.

It must not be forgotten that on turning to the page upon which the individual remedy is discussed, we find judicial and sometimes caustic criticism of its claims, and thus one can be sure that a statement which receives Dr. Stillé's indorsement is one which he has either practically put to the test, or which commends itself to his judgment by its source and by its accordance with reason and sound principles of medicine.

To point out in detail the merits of this stupendous achievement of science and industry would be an endless task; to state the few deficiencies we have noted is a brief matter. D. D. Stewart's investigations have conclusively proved that the proprietary substance called hydro-naphthol did not deserve any recognition apart from the virtue of the beta-naphthol it might contain, and that the so-called discriminating tests were fallacious. We are therefore sorry to see hydro-naphthol given separate mention and reference to Stewart's work omitted. We cannot agree with the author's somewhat slighting estimate of the value of creosote and of iodoform in the treatment of pulmonary tuberculosis. We have been unable to find reference to one of the best salts of quinin, the double hydrochlorate of quinin and urea, the usefulness of which by hypodermatic injection has been conclusively proved.

Quinin chlor-hydro-sulphate is also omitted. Sodium succinate, which is not mentioned, is a useful remedy in the treatment of biliary lithiasis. While there is a good article on calcium chlorid, one of its most important uses—as a hemostatic and a remedy in hemophilia—is omitted. We must call especial attention to the very just estimate that Dr. Stillé places upon antipyrin and its poisonous congeners, and his implied condemnation of the entire practice of antipyretic medication. It is true that the profession is recovering its sanity on this subject, but Dr. Stillé's weighty words cannot fail to confirm that wholesome tendency.

In conclusion, we must again express our admiration of the manner in which authors and publishers have done their respective shares of the work, and congratulate American science upon having produced a pharmacologic commentary at once so modern in its comprehensiveness and its thoroughness, and so loyal to long-established professional and scientific principles in its inspiration. There is no other guide so safe or so sure.

Pyogenic Infective Diseases of the Brain and Spinal Cord: Meningitis, Abscess of Brain, Infective Sinus-thrombosis. By William Macewen, M.D., Glasgow. 8vo, pp. 354. New York: MacMillan & Co., 1893.

Atlas of Head-sections. Fifty-three Engraved Copper-plates of Frozen Sections of the Head, and Fifty-three Key-plates, with Descriptive Texts. By William Macewen, M.D. 4to. New York: MacMillan & Co., 1893.

Although issued concurrently, these two books have not the relation of text and atlas. Each is complete in itself.

The one first named is a surgical monograph of a very high order. Its keynote is to be found in the preface, where the author states that within the last ten years he has had experience leading him to believe that abscess of the brain and other pyogenic intra-cranial affections are of more frequent occurrence than has been usually supposed, and to take a less somber view than he formerly did of the chances from operative interference in cases of this kind.

The first chapter contains a clear and philosophic exposition of the surgical anatomy of the brain and its coverings, at various periods of life. Especial stress is laid upon the intra-cranial circulation, and upon the arrangement of the veins so as to secure an even, regular, constant flow of the blood, without fluctuation, and free from suction-interference on the part of the large extra-cranial veins. A point of some importance is the description of what the author proposes to call the "supra-meatal triangle of the temporal bone"—a space, usually depressed, just above the meatus externus, and below the posterior root of the zygoma; here access is best gained to the mastoid antrum.

In the second chapter, on pathology, an account is given of the various intra-cranial lesions which may result from pathogenic and saprophytic causes, and of the manner in which microörganisms reach the interior structures. Here, as might be expected, much is said regarding suppurative inflammations, acute and chronic, of the middle ear. The mode of formation of abscess in different portions of the brain is described. Leptomeningitis, in its various forms, and encephalitis, are discussed. A brief section is added upon tuberculosis and carcinoma as met with in the middle ear.

The third chapter deals with the symptoms of cerebral abscess, and the fourth with thrombosis of the intracranial sinuses, in its two recognized forms—marasmic and infective. In these and the preceding chapter, the views advanced are illustrated and enforced by clinical histories, more or less full in detail.

The fifth chapter is devoted to the subject of treatment. Prophylactic measures must be enforced, chiefly in the way of thorough antisepsis and asepsis. In a very large class of cases, for the most part of a kind which at first, at least, are entrusted to specialists in aural surgery, the failure of ordinary means should lead to a resort to operative interference. As to this, the author gives very full and clear directions. For opening the mastoid antrum, he prefers the rotary burr, driven by a surgical engine, to any other instrument. He justly objects to the use of the chisel and mallet for this purpose,

on account of the risk of damage to the contained parts, either from the unavoidable concussion, or from direct wounding, as well as because of the comparative roughness of the opening thus made.

In the sixth chapter we find a statement of the practical results obtained by the author from the carrying out of his views as set forth. These results are very modestly presented, and bear the impress of candor; they certainly afford a very strong warrant for the acceptance of his teachings.

We regret much that the limitations of our space forbid an extended analysis of the material contained in this very important work, but oblige us to be content with the foregoing brief *résumé* of its scope. The history of the recent development of brain-surgery is, indeed, instructive. Perhaps in no other field have greater or truer triumphs been achieved as the result of scientific research, demonstrating the causal relations of morbid processes, rendering operative interference at once rational, effective, and safe, and banishing the so-called conservatism, under which the surgeon sat "letting 'I dare not' wait upon 'I would'" while his patient drifted along to death.

We cannot conclude without referring to the beauty of the illustrations, sixty in number, all but three of which have been prepared expressly for the work before us. They are not only fine artistically, but singularly faithful and suggestive as representations of anatomic or diseased conditions. The typography and mechanical execution of the book leave nothing to be desired.

The other work now under notice is equally deserving of praise. It consists of fifty-three admirably-executed copper-plates, representing sections of the head. Of these, twenty-four are coronal, eleven sagittal, and eighteen horizontal. Each one has opposite to it a key-plate (woodcut) in outline, with a few lines of explanatory text. The coronal sections are in three series, the first consisting of thirteen from a subject sixty years old, the second of seven from a man of forty, and the third of four from a child aged two and a half years.

The eleven sagittal sections are all from the same subject, a man thirty years of age.

Three subjects, males, aged respectively thirty-five, fifty, and five, have supplied material for the horizontal sections: eight being taken from the first, two from the second, and eight from the third.

These plates are very interesting, and by means of them the relation of the various parts of the brain to one another and to the exterior of the skull is clearly shown. They will greatly aid the earnest student of cranial topography, and enable him to profit far more by his practical work in dissection and at the bedside.

Much credit is due the publishers for their enlightened enterprise in giving to the profession these admirable specimens of the book-maker's art.

Lectures on the Surgical Disorders of the Urinary Organs. By Reginald Harrison, F.R.C.S., .etc. Fourth edition, rewritten. 8vo, pp. 588. London; J. & A. Churchill, 1893.

This new edition of Mr. Harrison's well-known work will be cordially welcomed by a large class of readers. Although not a treatise, it contains a vast amount of information, the outcome of a wide and carefully digested experience. The material has been largely recast, with additions embodying the recent advances in genito-urinary surgery. These, indeed, are neither numerous nor important; among them we may note the operation of suture in cases of rupture of the urethra, the suprapubic opening of the bladder, the use of the cystoscope, and the employment of cocain as a local anesthetic in the urethra.

However desirable it may be, theoretically, to secure accurate apposition of the divided ends of a urethra, our own experience has been that the results of free perineal incision and the tying-in of a soft catheter are thoroughly satisfactory to both patient and surgeon. And we should judge that, except in most dextrous hands, the application of sutures would be not only difficult, but likely either to fail altogether or to give rise to stricture of an intractable form.

We are glad to find the suprapubic route to the cavity of the bladder—the simplest, safest in most cases, and in many the most practically useful—favored by so high an authority.

Mr. Harrison's expectations from the cystoscope, we must confess, are more sanguine than our own. We can remember when the instruments of Cruise and Desormeaux excited much enthusiasm among our fellow-surgeons; and while the electric lamp obviates one of the difficulties in their use which led to their abandonment, we have grave doubts as to the value claimed for the newer appliances. That they may, in a limited range of cases and under skilled manipulation, give some information to practised eyes, is very probable. But that the cystoscope will ever become, like the stethoscope, an article of daily use, to be found in the hands of the rank and file of the profession, we can hardly imagine.

In speaking of sounding, Mr. Harrison says that the sensitiveness of the urethra may be lessened "by a preliminary injection of a 10 per cent. solution of cocain." We think it would have been well to state the amount. One dram of a 20 per cent. solution, used in this way, has proved fatal in twenty minutes in a case reported a few years ago; and it is well known that the susceptibility varies in different subjects, so that in some a smaller quantity might be dangerous.

Apart from its great general merit, there is one feature of this book which should commend it to the profession in this country—the author extends thorough recognition to the work of American surgeons.

CORRESPONDENCE.

A CASE OF SCROTAL ERYSIPELAS.

To the Editor of The Medical News,

Sir: I was called to see Mr. N., thirty-seven years of age, on February 16, 1894. I found him suffering severe pain in the perineum. The temperature was normal; the pulse somewhat exaggerated; the tongue not coated. The man explained that he had recently been afflicted with a number of boils, especially one on the perineum, which had apparently healed. He had also ridden on a horse without a saddle, which had injured the boil.

Upon examination I found the perineum and the most dependent part of the scrotum red, swollen, and congested. I ordered flaxseed poultices to be applied to the part during the night and prescribed morphin sulph., gr. ss, to be given at intervals to relieve pain. Next morning at 8 A.M. I found the patient had passed a restless night. The scrotum was more swollen; there was still no abnormality of temperature and no constitutional symptoms, and the appetite was fairly good. The treatment was continued. On the evening of the same day, at 5 P.M., I found the man's temperature 101°, the pulse 90, the tongue slightly coated. I then added quinin sulphate and tr. ferri chloridi to the treatment. On the morning of the third day I found the scrotum very much swollen and painful, *not pitting* on pressure and not itchy. The swelling had extended to the penis, the femoral region, and the inner side of the thighs. The temperature was 104°, the pulse 120, the tongue more coated and dry. I ordered a purgative of magnesium citrate, and directed starch poultices to be applied. On the evening of the third day, at 6 P.M., I found the patient's bowels had moved. I now noticed a small abrasion of the skin near the median line of the scrotum which was discharging a thin watery fluid. On the morning of the fourth day, twelve hours after the last visit, I found the whole of the scrotum black and discharging freely, and a considerable amount of sloughing of the penis. The patient was now lapsing into a comatose condition, and death ended his sufferings at 1 P.M. the following day, February 20th.

Gross's *System of Surgery* speaks of scrotal erysipelas or the inflammatory edema of Robert Liston.

Respectfully yours,

R. Warren Ramsay, M.D.,

Delta, Pa.

GALVANO-PUNCTURE FOR HYPERTROPHIED TONSILS.

To the Editor of The Medical News,

Sir: In the issue of The Medical News of February 17, 1894, Dr. Ward in his article on "New Ideas, etc.," does serious injustice to the results of galvano-puncture in the reduction of hypertrophied tonsils.

He states that "under the most favorable auspices galvano-puncture will require not less than a dozen sittings to produce any decided result." He also says that "it is unnecessary to state that the pain produced by this method of operation offers quite a serious obstacle to its employment."

Both these statements are entirely incorrect. The operation can be made entirely painless by brushing the tonsils with a 20 per cent. cocain solution and by instilling a drop or two of a 4 per cent. cocain solution into each lacuna, the patient being cautioned not to swallow any of the drug.

It need never require more than two sittings (and generally but one) to shrink the largest tonsils to normal size by the following method: The cautery-point is inserted as deeply as it will go into each lacuna, brought to white heat, and withdrawn in a couple of seconds.

After the cauterization of each lacuna, a flat cautery electrode (or the needle electrode curved so as to adapt itself to the tonsil) is passed over the surface of the tonsil and several furrows drawn. There is little or no after-pain. The slough is cast off gradually during the following fortnight, and the tonsil reaches its maximum of shrinkage in about four weeks. A repetition of the painless, bloodless procedure, easily practised on both children and adults, is rarely necessary.

Edwin J. Kuh, M.D.

Chicago, Ill.

A PRACTICAL METHOD OF REGISTRATION OF TUBERCULOSIS.

To the Editor of The Medical News,

Sir: Believing that many physicians are thoroughly in earnest in their efforts to prevent the spread of tuberculosis and to reduce the present high mortality from this disease, I offer the suggestion that some medical society, the County Medical or the Pathological, for instance, establish a private registry wherein may be recorded all such cases of tuberculosis as willing and volunteer members may chance to discover in their private or public practice, so that such particulars as shall relate to the causation, as inheritance, occupation, exposure to infection, hygiene of the individual and of the locality, color, race and nativity, etc., shall be definitely stated, so that a scientific and accurate investigation extending over some period of time might be had. The value of such a registry would appeal to all intelligent physicians, and their active coöperation could probably be obtained. This would in nowise interfere with the liberty of the patient, and must surely prove of incalculable value to the student. The expenses of the undertaking would be nominal.

Very respectfully,

M. V. Ball, M.D.

Philadelphia.

NEWS ITEMS.

American Medical Association.—The Section on Surgery and Anatomy will devote a portion of time to the systematic consideration of a few selected subjects, upon which papers, each not occupying more than ten minutes, will be read. It is hoped that speakers discussing these papers will confine their remarks to brief addresses of five minutes' length. The following papers are announced:

"The Pathology of Malignant Growths," by Dr. E. Laplace, of Philadelphia; "A Critique of the Sporozoan Theory of Malignant Neoplasms from a Micro-technical Standpoint," by Dr. A. P. Ohlmacher, of Chicago; "Clinical Recognition of Malignancy in Tumors," by Dr. C. A. Wheaton, of St. Paul, and Dr. Henry W. Coe, of Portland; "The Necessity of Early Surgical Interference in Malignant Tumors," by Dr. R. A. McLean, of San Francisco; "The Value of Caustics in Malignant Growths," by Dr. John Parmenter, of Buffalo; "The Radical Cure of Malignant Tumors by Operation," by Dr. J. H. Wythe, of Oakland, Cal.; "The Value of Inoculations with Septic or Toxic Agents in the Treatment of Malignant Neoplasms," by Dr. John A. Wyeth, of New York; "Early Symptoms and Diagnosis of Tuberculous Joint-disease," by Dr. Emmet Rixford, of San Francisco, and Dr. A. B. Judson, of New York; "Conservative Treatment of Tuberculous Joints," by Dr. R.

H. Sayre, of New York, Dr. Harry M. Sherman, of San Francisco, and Dr. James E. Thompson, of Galveston; "Operative Treatment of Tuberculous Joints," by Dr. Robert W. Lovett, of Boston; "Treatment of Tuberculous Joints by Injections of Iodoform," by Dr. N. Senn, of Chicago; "Treatment of Tuberculous Joints by Injections of Corrosive Sublimate," by Dr. R. H. Plummer, of San Francisco; "The Causation and Prevention of Hernia," by Dr. James T. Jelks, of Hot Springs, Ark., and Dr. C. M. Richter, of San Francisco; "The Management of Reducible Hernia," by Dr. Emory Lanphear, of Kansas City, Mo., and Dr. C. M. Fenn, of San Diego, Cal.; "The Treatment of Irreducible Hernia," by Dr. James B. Eagleson, of Seattle, Wash.; "The Treatment of Strangulated Hernia," by Dr. Joseph Ransohoff, of Cincinnati; "The Radical Cure of Hernia," by Dr. W. E. S. Davis, of Birmingham, Ala., and Dr. H. O. Marcy, of Boston; "The Pathology and Symptomatology of Hemorrhoids, Anal Fistule, and Anal Fissure," by Dr. J. M. Matthews, of Louisville, and Dr. David Powell, of Marysville, Cal.; "Treatment of Hemorrhoids," by Dr. H. M. Bishop, of Los Angeles, Cal., and Dr. Charles B. Kelsey, of New York; "Treatment of Anal Fistule," by Dr. J. McF. Gaston, of Atlanta, and Dr. G. B. Somers, of San Francisco; "Treatment of Anal Fissure," by Dr. Thomas W. Huntington, of Sacramento, and Dr. Lewis H. Adler, Jr., of Philadelphia; "Treatment of Fractures of the Lower End of the Humerus," by Dr. Oscar H. Allis, of Philadelphia; "Treatment of Fractures of the Lower End of the Radius," by Dr. P. T. Conner, of Cincinnati, and Dr. C. L. Bower, of Philadelphia; "Treatment of Fractures of the Neck of the Femur," by Dr. Bedford Brown, of Alexandria, Va.; "Treatment of Gunshot Fractures," by Dr. George A. Goodfellow, of Tucson, Arizona; "Treatment of Fractures of the Shaft of the Femur," by Dr. Llewellyn Eliot, of Washington, D. C.; "Treatment of Open or Compound Fractures," by Dr. H. H. Mudd, of St. Louis, and Dr. John B. Hamilton, of Chicago; "Effects of Obstruction in Urination upon the Bladder and Kidneys," by Dr. J. William White, of Philadelphia; "Diagnosis and Treatment of Enlargement of the Prostate Gland," by Dr. Hunter McGuire, of Richmond, and Dr. William T. Belfield, of Chicago; "Symptoms and Treatment of Stone in the Bladder," by Dr. William T. Briggs, of Nashville; "Symptoms and Treatment of Tumors of the Bladder," by Dr. John B. Deaver, of Philadelphia, and Dr. C. F. Buckley, of San Francisco; "Treatment of Stricture of the Urethra," by Dr. J. Rosenstirn, of San Francisco.

Longevity.—Dr. Archer Atkinson, of Baltimore, has succeeded in collecting from various reliable sources the names of some 250 persons who were known to have lived to the age of 100 years or more.

The American Surgical Association will hold its annual meeting in the lecture room of the Medical Department of the Columbia College, Washington, D. C., on May 29, 30, 31, and June 1, 1894.

Dr. John Ashhurst, Jr., will read a paper entitled "The Surgical Treatment of Empyema," the discussion of which will be participated in by Drs. N. P. Dandridge, C. B. Nancrede, T. F. Prewitt, and De F. Willard.

Dr. J. S. Billings will present a communication upon "Methods of Teaching Surgery," which will be discussed by Drs. J. C. Warren, N. Senn, W. W. Keen, E. M. Moore, W. T. Briggs, and Hunter McGuire.

Dr. L. M. Tiffany will read a paper upon "The Surgery of the Kidney," in the discussion of which Drs. M. H. Richardson, H. H. Mudd, C. H. Mastin, and Ford Thompson will take part. Summary: 1. Influence of disease of kidney on general surgery. 2. Nephritis. 3. Pyelonephritis. 4. Nephrolithiasis. 5. Nephrectomy, partial and complete.

Dr. W. W. Keen will read a paper entitled "Methods of Controlling Hemorrhage in Amputation at the Shoulder," as illustrated by three cases of amputation at the shoulder-joint and of the entire upper extremity, which will be discussed by Drs. Roswell Park, C. B. Porter, and J. William White.

Papers will also be read by Dr. Hunter McGuire and Dr. Joseph Ransohoff.

The Association of Military Surgeons of the United States will hold its fourth annual meeting in Washington, D. C., May 1, 2, and 3, 1894.

This national organization is composed of medical officers of the U. S. Army, U. S. Navy, National Guard of the United States, and the Marine Hospital-Service, and includes in its membership many distinguished surgeons. A brilliant and able literary program is promised. The afternoon of one day will be set apart for an object lesson from the *Manual of Drill*, by the Hospital Corps. The evenings will be given up to social entertainments. About five hundred delegates are expected to be in attendance.

Dr. Nicholas Senn, of Chicago, is President of the Association, and Dr. George Henderson, of Washington, Chairman of the Committee of Arrangements.

The Colorado State Medical Society will hold its annual meeting at Denver, June 19, 20, and 21, 1894. A cordial invitation is extended to members of the American Medical Association to attend the meeting, and those who expect to return East *via* Denver are invited to correspond with the Secretary, Dr. A. Stewart Lobingier, in order that an invitation to participate in the program may be extended and proper entertainment may be arranged.

Mikulicz, of Breslau, is under consideration as the successor of Billroth at Vienna.

Books and Pamphlets Received.

Seventh Annual Report of the Ophthalmological Department of the State Hospital for the Insane at Norristown, Pa. Ophthalmologist, Charles A. Oliver, M.D. Reprinted from the Thirteenth Annual Report, 1892.

Syllabus of Lectures on the Practice of Surgery. Arranged in Conformity with the American Text-book of Surgery. By N. Senn, M.D., Ph.D., LL.D. Philadelphia: W. B. Saunders, 1894.

Two Cases of Laryngeal Neoplasms. By Robert Levy, M.D. Reprinted from the Journal of the American Medical Association, 1893.

Hysterectomy by a New Method. By E. H. Pratt, M.D. Reprinted from the Journal of Orificial Surgery, 1893.

A Possible Case of Anesthetic Leprosy. By James McF. Winfield, M.D. Reprinted from the Brooklyn Medical Journal, 1893.

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ORIGINAL ARTICLES.

PERIPHERAL FACIAL PARALYSIS.[1]

BY MARIA M. VINTON, A.M., M.D.,
OF NEW YORK.

PERIPHERAL facial paralysis, of Bell's type, so-called, is one of the most frequently met of nervous lesions, aside from those that are called functional. It results from a neuritis of the facial nerve, either external to the stylo-mastoid foramen or within the aquæductus Fallopii. During ten years of clinical work in the Nervous Department of the Manhattan Eye and Ear Hospital fifty-two cases of this affection have been treated. These cases have all received electric treatment only, aside from the regulation of the general health, and they show conclusively the value of such treatment, if persistently carried out, in securing the cure of the affection or a marked degree of improvement.

The facial nerve, from its anatomic relations in its course from the brain to the face, is peculiarly exposed to influences producing neuritis. Arising from a nucleus in the floor of the fourth ventricle, it makes its exit from the medulla in the groove between the olivary and restiform bodies, just behind the pons. It passes forward and outward upon the crus cerebelli and enters the internal auditory canal lying upon the auditory nerve. This close relation with the nerve of hearing often determines a common lesion of both nerves in the canal. At the bottom of the meatus it enters the aquæductus Fallopii, and follows its course as it curves downward behind the tympanic cavity, in the substance of the temporal bone. It is there exposed to the influences of pressure and inflammation extending from a diseased middle ear; and it is peculiarly liable to pressure from its course, as it lies in a small bony canal which gives no room for the swelling accompanying inflammation of its sheath, so that a very moderate degree of inflammatory action may determine sufficient pressure to destroy the function of the nerve partly or entirely.

In the upper part of the canal, through the Vidian nerve and Meckel's ganglion, the facial nerve supplies the levator palati and uvula, and taste-fibers to the tongue. A lesion here, according to some authors, causes paralysis of the palate; a lesion beyond this point leaves the palate normal. Just beyond this point the nerve enlarges to form the geniculate ganglion, from which rises a tympanic branch, supplying the stapedius and laxator tympani muscles. A lesion here is accompanied by paralysis of these muscles, and an abnormally tense tympanic membrane, causing the rare symptom of hyperacusis or exaggerated hearing.

As the nerve passes vertically downward behind the tympanic cavity it gives off the chorda tympani nerve one-quarter of an inch before its exit from the stylo-mastoid foramen. This nerve supplies filaments to the submaxillary gland and carries taste-fibers to the gustatory nerve. A lesion between here and the geniculate ganglion gives absence or alteration of taste on the corresponding half of the tongue anteriorly, and dryness of the mouth. Just within the foramen the nerve sends branches to two muscles of the external ear. It supplies motion to the entire side of the face, the stylo-mastoid muscle, and the posterior belly of the digastric. A lesion at any point in its course gives rise to paralysis of the entire corresponding half of the face.

A lesion in the brain itself, internal to the nucleus in the fourth ventricle, affects only the muscles about the lower half of the face, leaving the eye normal; while an extra-nuclear or peripheral lesion involves the eye also. In intra-nuclear lesions voluntary power is more affected than emotional movements, and there is no degenerative reaction or atrophy of muscles, thus following the rule for cerebral paralysis. In peripheral lesions we have a more or less marked reaction of degeneration in nerve and muscle and muscular atrophy. I propose to speak only of extra-nuclear or peripheral lesions.

According to the examination of my cases, the commonest cause of facial paralysis is cold, there being eighteen cases in which some form of exposure, followed by pain and soreness in the side of the face, had preceded paralysis. Common examples of this cause are the following: sleeping under an open window; sitting, in winter, at work by a loose sash, through which the wind blows; riding in cars in a draught after exertion; sleeping out after a debauch. Here a neuritis or a perineuritis exists within the Fallopian canal, or near the exit of the nerve from the canal. Paralysis generally occurs within twenty-four hours from the time of exposure, the patient often going to bed well and waking in the morning with a "crooked face."

[1] Read at the December meeting of the Alumnæ Association of the Women's Medical College of the New York Infirmary.

The second cause, in point of frequency, is disease of the middle ear, with or without abscess. I find records of twelve cases in which for weeks or months there had been inflammatory action going on in the middle ear or mastoid cells, and pressure from swelling or extension of inflammation had finally reached the facial nerve and caused paralysis. In three of these cases the paralysis followed operations. In Case XI there had been an operation for mastoid disease. Case II followed removal of carious bits of bone from the external auditory meatus. Case LII had been entirely deaf for some years. She was advised to have the ossicles removed, in the hope of giving her slight hearing, and was told that the operation could not do her any harm, and benefit might be gained. Great was the disgust of the young lady to find her beauty spoiled by a complete paralysis of the side of her face corresponding to the operation. This shows how careful operators should be in their operations in so small and delicate a cavity as the tympanum.

Two patients had fracture of the skull. Case XXV fell from a height of three stories and sustained a fracture of the skull, which resulted, among other things, in facial paralysis. Case VI was a marble-worker. While standing near the wall of the yard several slabs of marble which leaned against the wall fell over, knocking him down and fracturing the skull and left arm. He was unconscious in the hospital for some days, and on regaining consciousness was told that his face was crooked. This case was a very marked one at first, and has improved very much after six months of careful electric treatment. He can now close the eye and make nearly all the lip-movements normally.

Case IX followed the formation of an abscess on the side of the head resulting from a blow above the ear. The abscess was not opened until some time after suppuration occurred. The pus probably burrowed downward. Neuralgia came on, followed by trismus and facial paralysis from involvement of the facial nerve in front of the ear. There was at no time any trouble with the internal or middle ear, and the suppuration was entirely external to the skull.

Case V gave a clear history of syphilis of some months' duration. He had severe head-pain for several weeks, then suddenly-occurring deafness in the left ear and left facial paralysis. The auditory and facial nerves were probably implicated together in the interval auditory meatus by a specific inflammation.

Case XIX had double facial erysipelas, affecting both auricles and extending up into the meati auditorii. At the end of three weeks deafness and facial paralysis appeared on the right side, and after three days the same occurred on the left. The reaction of complete degeneration was present on the left side, and no improvement resulted from treatment, while on the right the reaction showed less marked degeneration, and partial recovery occurred. Here, as in the last case, the nerves of hearing and of motion to the face must have been implicated in their course together. The deafness was complete and permanent on both sides.

In twelve cases no cause could be found for the occurrence of the paralysis; there were no prodromal symptoms, and the paralysis appeared suddenly, the patient going to bed well and waking in the morning with the typical symptoms.

There seems to be no preference for either side of the face, cases being nearly equally divided between the right and left sides. Two cases were bilateral—one from facial erysipelas, and one from double-ear disease. The cases occurred about equally among males and females, and occasionally among children. Five of my cases were in children: one in a girl of nine years, following middle-ear disease; three in infants, with unknown cause; one in a case of anterior poliomyelitis, the nucleus of the seventh nerve being affected as part of the prolongation of the anterior columns of the cord upward.

Symptoms. The affected side of the face is immovable and expressionless, the eye widely open without power to raise the lower lid; the upper lip and cheek cannot be drawn up or the forehead wrinkled; all the lines of expression are smoothed out of the face, and the angle of the mouth droops. The opposite side overacts, drawing the mouth away from the paralyzed side. This condition is very marked during speech and attempts to smile or weep, the flat and expressionless side contrasting forcibly with the contorted healthy side. The unclosed eye becomes red and irritated from the effects of wind and foreign particles, and from the dryness produced by inability to close it, and I have seen one case of ulcer of the cornea result. The labials cannot be pronounced correctly, from paralysis of the lip-muscles, and the patient cannot whistle or blow out a candle, from implication of the orbicularis oris. Food lodges in the cheek from paralysis of the buccinator, and the naris does not dilate in forced inspiration. Patients often complain that the face was swollen when the trouble began, but this swelling is only apparent, owing to the drooping and flattening of the cheek. Prodromal symptoms, such as pain, neuralgia, soreness of the side of the face, tinnitus and deafness often occur, especially when the cause is exposure or ear-disease. Deafness occurred in nineteen cases, twelve of which resulted from middle-ear disease.

Gowers throws considerable doubt on the occurrence of paralysis of the palate from disease of the facial nerve. He examined over one hundred

cases without finding one undoubted case of paralysis of the palate. I find in my fifty-two cases no record of paralysis of the palate. One case only is reported as having difficulty in swallowing, but with the arches of the palate even. Cases V and XIV must both have had lesions of the nerve above the point of emergence of the fibers for the palate, yet neither complained of any symptoms referable to the palate.

I find two cases in which there was alteration of taste due to a lesion of the chorda tympani nerve. Case XXIII had a metallic taste in the half of the tongue on the paralyzed side. Case LII had absence of taste on the anterior part of the tongue on the paralyzed side. Thus we see that of these fifty-two cases, all but three were probably produced by inflammations in the lower part of the Fallopian canal or on the side of the face just external to the canal.

Before passing on to the treatment and its results, let me notice a few of the more interesting cases:

Case XLVIII.—C. H., a gravel-roofer, thirty-nine years old, has always been a perfectly healthy man; he remembers no sickness, and denies venereal diseases, but was a user of alcohol and tobacco to excess up to nine years ago. He is at present the picture of health. Eight years previous to his coming under observation he began to have facial convulsive tic; the spasm involved the whole left side of the face. At first it was only occasional, and involved only part of the face; later it became very annoying, being constant even during sleep. He came first to the Eye Department, and had a small amount of hypermetropia corrected by glasses, with benefit to the tic for a few days. The spasm returned as annoying as before, and he was brought to the nervous department. After observation for one week his nose was examined, and a spur found on the left side of the septum. This was removed, with the same temporary benefit as before. However, he soon returned unimproved. He was now told that the operation of nerve-stretching of the seventh nerve would probably give him at least temporary relief, causing however facial paralysis. He gladly agreed to the operation, and on January 5, 1893, Dr. Terriberry made an incision below the ear, and with a strabismus-hook stretched the nerve, using about five pounds of force, and exerting it until the faradic current applied to the nerve gave no contraction in the facial muscles. There resulted complete peripheral facial paralysis and complete relief from the tic, with which the patient expressed himself very much pleased. His facial paralysis ran the usual course of a mild type; the reaction of degeneration was never marked, the faradic current giving slight contraction in the muscles through the nerves, and galvanism giving contraction with normal formula. In four months voluntary control was normal in the face. At present, more than a year from the operation, the tic is still absent. During the past month he has had spasm for a few seconds several times. Up to last month no tic occurred at all.

Case XV.—Margaret W., sixty-six years old, a German widow, had had four children, all of whom were living and well. She had never had any miscarriages, had always been well, and remembered no illness other than normal childbirth. She gave no history of syphilis, and the family history is of no importance. She was first seen in October, 1891. In the previous January she noticed a "pimple" on the left cheek, near the angle of the jaw, which soon became a patch of vesicles filled with clear fluid. They remained thus for two months, then broke, discharged a watery fluid, and dried, forming superficial cheesy flat masses covered by thin crusts. She then began to have pain, starting at the seat of the eruption and extending over the side of the face and upon the scalp, but not involving the infra-orbital region. The pain was not darting in character, but steady, and more of the character of neuritic pain. It became so severe that she was obliged to take large doses of laudanum to obtain any relief or sleep. Pressure over the exit of the branches of the fifth nerve showed no tender spot, and manipulation of the face gave no increased pain. Six months after the appearance of the vesicles, and four from the commencement of the pain, a complete left-sided facial paralysis occurred of Bell's type. This was later followed by trismus, and the patient was unable to separate her teeth more than half an inch, or to chew solid food. There was no anesthesia or analgesia of any part of the face or head. When I first saw her the face was much drawn to the right, showing the completeness of the paralysis, there being absolutely no resistance by the muscles of the left half of the face. The skin of the affected side was shiny, and none of the lines of expression remained. There was no paralysis of the palate or alteration of taste. Sight and hearing were normal, as well as the sense of smell. The eye-muscles were normal. At this time the eruption formed a patch the size of a half-dollar over the cheek just above the angle of the jaw. It was dry, flat, whitish, with pigmented spots; showed no ulceration and no discharge; was slightly raised above the surface of the skin, and had a slight, red areola; it was not painful or tender. There were no enlarged glands in the neck. Aside from the pain and facial paralysis the patient was well, though worn by pain and fasting.

Dr. G. T. Jackson presented the case to the New York Dermatological Society. No member ventured a diagnosis of the skin-lesion.

Dr. A. R. Robinson said he had seen a similar eruption in a case of cerebral hemorrhage.

Dr. Piffard suggested that it might be tuberculous, and Dr. Bulkley thought it well to try anti-syphilitic treatment. Accordingly the cheesy superficial mass was examined for tubercle-bacilli, with negative results.

The patient would not permit the removal of a portion of the skin for examination. She was then put on mixed treatment, the solutions increasing in strength, as recommended by Dr. Bulkley. At the same time aconite was used for the pain, with slight relief.

Dr. William R. Birdsall examined the case with reference to the nervous lesion, and expressed the

opinion that we could locate no lesion other than that of peripheral facial paralysis, the seventh nerve being affected within the aquæductus Fallopii. The fifth nerve was not implicated in all of its branches, and there were no symptoms of a lesion of other cranial nerves. He thought that the pain and trismus were reflex symptoms.

The members of the Dermatological Society had concurred in calling the skin-lesion a "neurosis." The reactions of complete degeneration in the nerve and muscles of the face were found on testing with electricity.

Galvanism was applied to the facial muscles. At the end of six weeks of anti-syphilitic treatment Dr. Bulkley considered the skin-lesion to be improved. It had dried some, and in parts seemed to have been absorbed. This seemed to me to be no greater change than had occurred in the time before this treatment was instituted. There was now a chain of enlarged lymphatic glands extending from the angle of the jaw to the clavicle. In other respects the patient remained unimproved, the facial paralysis remaining the same, and the pain constant and intense.

I now lost sight of the woman, and learned later from her daughter that she had gone to an institution in New Jersey, where she remained until her death, in August, 1892. At the time of her death all the conditions present when I last saw her had remained the same, and when her daughter last saw her "there were sores all over her face." The death-certificate stated that she died of "paralysis of the face and throat," but the daughter was given to understand that she had "cancer." I could not learn whether an autopsy was held—in all probability there was none. Thus the later history did not clear up the diagnosis of the cause of her various symptoms.

The prognosis and treatment of cases of facial paralysis depend much on the amount of damage to the nerve that has occurred. A clue to the results to be obtained is given by the electric reactions found in the nerve and muscles affected. These cases may be divided into three classes:

1. Mild cases, which recover in a few weeks. Here, at the end of ten days both muscle and nerve contract to faradism and galvanism, the latter giving normal formula, *i. e.*, C C C > A C C.

2. More severe cases, which recover for the most part completely after from four to eight weeks' treatment. Here there is diminished reaction to faradism and galvanism in the nerve; in the muscles increased excitability to galvanism and A C C = or > C C C.

3. Severe cases, which recover only partially after months of careful treatment. Here there is no contraction to galvanism or faradism in the nerve, while there is loss of faradic excitability in the muscles with reversed formula, and increased excitability to galvanism—in other words, complete degeneration-reaction.

These cases are followed by contracture of the facial muscles and fibrillary twitchings. I am now treating a case in which after five months' treatment the connective-tissue bands in the cheek feel like a band of iron when the finger draws upon them within the mouth. Another case complained of facial tic following paralysis.

Voluntary power begins to return before the electric reactions become normal, and the eye recovers more completely than the mouth. This is explained by Gowers as due to the intimate connection between the innervation of the orbicularis palpebrarum on the two sides, the nerve-power regenerating from the sound side.

In my fifty-two cases electric treatment alone was used, with the following results:

Complete recovery is recorded in eleven cases. Of these degeneration-reaction was slight in five cases, moderate in four, and marked in one. Treatment was begun early in all of these cases and continued for from two to five months. We use faradism in all cases in which it gives any reaction in muscle or nerve, applying a flat sponge on the back of the neck or palm of either hand, and an interruptor over the facial muscles. In many cases a reaction will be found by using a laryngeal electrode inside the cheek when none is produced with the sponge on the skin. We also use galvanism in these cases, and in all those that do not respond to faradism. For the galvanic current the electrodes are used in the same positions, the pole which gives strongest contraction being rubbed over the muscles in electric massage, or an interruptor is used. A sufficient current is used to produce moderate muscular contraction, and which at the same time is easily tolerated by the patient. The application is made from five to ten minutes three times a week. In private practice electricity may be used with advantage every day. Gowers states that electricity produces no effect on the regeneration of the nerve, but keeps up the tone of the muscles and prevents atrophy, so that as soon as any nerve-power is regained the muscles are ready to act. It is very noticeable how electricity wakes up contraction and voluntary power in neglected cases after its use for a week or more.

In twenty-seven cases improvement more or less marked is recorded. In ten cases the improvement was marked, amounting almost to cure. Of these, three showing marked degeneration-reaction received treatment from three to eight months and were nearly cured; while four others with moderate degeneration, who should have recovered under treatment, but neglected it, had only slight improvement. Two with slight degeneration, but neglecting treatment, only partially recovered.

Of the sixteen cases that were only slightly improved, most went entirely without treatment or

neglected it until so late that marked benefit could not be secured.

To sum up, our work indicates that electric treatment should be begun early and carried out regularly and persistently for from two to eight months, or until a cure is secured. As soon as marked contracture has occurred, the use of electricity should cease, as it then only intensifies the drawing of the face to the paralyzed side. The results of such early and persistent treatment will give a greater number of cures, and a greater degree of improvement in other cases, than will result without the use of electricity. In such a lesion the cosmetic effect is highly important to the patient, as well as the rapid return of power to cover the conjunctiva, to properly control the food, and to pronounce the labials.

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SHALL THE TERM AUTO-INFECTION BE RETAINED?

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The subject of auto-infection (the endogenetic origin of puerperal fever, as Barnes now prefers to speak of it) is prominently before the profession again, both in America and in Europe. In the New World it has been brought forward by Williams in an admirable paper,[1] and in the Old World by the address of Robert Barnes before the British Medical Association. Williams holds that auto-infection is possible in a large proportion of cases, but admits that its actual occurrence is very rare. Barnes, on the other hand, while appearing to doubt its very existence, yet proceeds to describe it, and is of the opinion that it occurs frequently. These authorities, however, differ essentially in their conception of what endogenetic puerperal fever is. Barnes holds that it may be caused by a chill or other abnormal condition of the system, while Williams strictly maintains its bacteriologic origin. A vast amount of the doubt and difficulty that now surround this subject will be cleared away if we can accept the latter theory. And it appears to me, after careful consideration of the subject, that not only is it permissible to hold this theory, but that the evidence produced compels the most unequivocal acceptance.

This being the case, the definition of puerperal disease is easily given. Puerperal infection (following Williams) is simply the infection that leads to surgical fever. It is produced by the same micro-organisms and manifests itself in similar ways. "In other words, puerperal infection is wound-infection." As a corollary to this it may be stated that there can be neither wound-infection nor puerperal infection without the presence of pus-producing organisms. It follows from this again that no matter what the condition of the patient may be, no matter how much fever, for instance, may be found in a patient after confinement—if that fever be not caused by absorption of pus-producing organisms—then that fever is not true puerperal fever.

For the purposes of this article it will be unnecessary to go over the bacteriology of the subject further than to say that the principal microörganism causing puerperal fever is the streptococcus pyogenes, while in rare instances the staphylococcus, the gonococcus, and even the colon-bacillus may produce it.

The exclusively bacterial origin of puerperal disease being admitted, the question of auto-infection will depend entirely upon the presence of the organisms named in the genital canal before confinement. For if there be no pus-producing organisms in that canal, there can be no endogenetic puerperal fever.

Those who have not followed this subject of recent years will not be inclined to assent to this proposition. For many causes have been given for auto-infection, and the older physicians will not feel disposed to cast them all aside at once. The logic of events, however, will necessitate the theory of all of these causes to be abandoned. The following is a condensed list taken from a recent standard work on obstetrics:[1]

1. Absorption of effete matters (not pus-producing).
2. Excessive muscular action.
3. Deficiency of the excretory organs.
4. The effects of difficult labor.
5. Decomposition of retained placenta, clots, or lochia.
6. Cold, or exposure.
7. Shock, or emotion.

To state these causes is to show their inapplicability. Not one of them takes into account true infection. Even the portion of retained placenta is not a cause, for any fever caused by its decomposition would be exogenetic in character, not endogenetic. As a matter of fact, these causes are now largely abandoned, even by those who so recently advocated them. Barnes himself seems to have relegated them to obscurity—with one exception. That exception (as we shall see further on) has to do with deficiency of excretory power.

If, therefore, these authorities no longer insist on the foregoing as causes, everyone will soon cease to think of them as being, in any case, sources of origin of endogenetic puerperal fever. These causes

[1] "Puerperal Infection considered from a Bacteriological Point of View, with special reference to the Question of Auto-infection." by J. Whitridge Williams, M.D. American Journal of the Medical Sciences, July, 1893.

[1] Galabin's Midwifery, 1886.

being eliminated, only one possible source of auto-infection remains, and that is, as stated, the presence of pathogenic organisms in the canal before confinement.

That streptococci (and other pus-producing organisms) do exist in the canal before confinement is fully admitted. They are present in many pregnant, and apparently healthy, women. Williams remarks in regard to this subject: "Pathogenic organisms may exist in the genital tract during pregnancy without giving rise to any symptoms whatever, and only exert their influence during labor or the puerperium, when the wounds which follow labor will afford abundant opportunity for their absorption."

Nothing can be more plain than this. Bacteriologists believe that the pathogenic microörganisms in the canal produce no harm till the surface is lacerated during labor. Then they are absorbed, the result being puerperal fever; and this, because the streptococcus dwelt in the body of the patient before confinement, they consider to be auto-infection. But is such a deduction justifiable? That streptococci are present in the canal all will admit. But they are foreigners—coming from some external source—never originating in the canal, and never becoming part of the body of the bearer. We must deny, then, that these foreigners can ever produce endogenetic puerperal fever. On the other hand, any fever caused by them would be strictly exogenetic—as truly so as though these same microorganisms infected a wound on the external surface of the body. So plain does this appear to be, that it is misleading to use the term auto-infection in such a case.

But, leaving aside this objection to the term, a more important inquiry is: Are those streptococci in the canal ever a cause of puerperal fever—in other words, are they ever infective? This question has not yet been answered in the affirmative. But can it be answered in the negative? We believe it can. We believe that the streptococci in the canal are not infective unless made so by external assistance. If this position can be maintained, it will be seen that a case of endogenetic puerperal fever is an impossibility. As tending to support the position taken I submit the following records from my own practice.[1]

Case I.—Mrs. M., multipara, was a healthy and vigorous subject. Her surroundings were excellent and the nursing unexceptionable. To accomplish delivery it was found necessary to pass the hand into the vagina, the fingers into the uterus, and to use the forceps through the os. Convalescence was uninterrupted. The pulse and temperature were normal throughout, the temperature never rising above 99°. The record was kept until the ninth day.

Case II.—Mrs. G., primipara, was a healthy, strong young lady. Her surroundings were good. The hand had to be introduced as in the first case, and the forceps used high up, passing into the uterus. Recovery was excellent. The pulse and temperature were normal throughout. In this case the perineum was considerably lacerated, but was drawn together immediately by carbolized silk sutures.

Case III.—Mrs. M., a multipara, with good surroundings, had fairly good health at confinement. The head was well down before the forceps was used, but it was passed into the uterus. The temperature never went above 99°, and an excellent recovery followed.

Case IV.—Mrs. A., a multipara, had poor, uncleanly surroundings. The hand was passed into the vagina. There was a breech-delivery. The woman made a good recovery, the temperature never rising above 100°.

Case V.—Mrs. O'N. was a multipara. The hand was passed into the vagina and the fingers into the uterus. The forceps was used through the os at the superior strait. Recovery was a little slow, but good. The temperature never rose above 100°.

Case VI.—Mrs. S., a primipara, was a healthy young lady, whose surroundings were excellent and she was well nursed. The hand was introduced into the vagina, the fingers through the os, and a breech-presentation diagnosticated. After a considerable time delivery was assisted by a soft fillet. All efforts to deliver the head were futile at first; asphyxia threatened, and to save life the forceps was rapidly applied and the head extracted. A considerable laceration was the result, which was stitched. The temperature and pulse remained normal throughout.

Case VII.—Mrs. H., a multipara, was far from strong. The building in which she lived was a portion of a stable. It was cleanly kept, but the odor of manure was manifest through every room of the house. The hand had to be introduced into the vagina as in the other cases, the forceps being passed into the uterus. Recovery was good, the pulse and temperature remaining normal.

Case VIII.—Mrs. H., a multipara, was a woman of nervous temperament, stout, with flabby and soft flesh. The anus opened into the vagina, all stools being extruded through the vulva. At confinement the whole hand was introduced into the vagina, and the fingers and instruments into the uterus. In this case, interesting by reason of the anatomic peculiarity, the variations of pulse and temperature were noted with the greatest care. The pulse and temperature, however, were perfectly normal throughout. The temperature never rose above 99°. The patient got up without permission on the eighth day because she "felt so well."

Case IX.—Mrs. F., a multipara, was a strong, large woman, the surroundings not being of the best. She

[1] These records cover a period of four and a half months, and include only those in which the labor was severe, those in which, for one reason or another, it was necessary to pass the hand into the vagina.

had miscarriage at three months. Chloroform was given and the hand passed into the vagina, and the uterine contents scooped out by the finger. They were very offensive. The uterus was irrigated with carbolized water. This was a case of pre-partum infection, the pulse being 100 and the temperature 99° on the day of first attendance. The temperature went up to 99⅘° on the third day, afterward remaining at 99° until attendance ceased.

Case X.—Mrs. M., a primipara, was a healthy young lady. The surroundings and attendance were excellent. At confinement the hand was introduced, the fingers entering the uterus. The forceps was applied at the superior strait. There was a small laceration, united by suture. I may note that the child was stillborn, and the breasts, as a consequence, were rather troublesome. In this case I give the daily record: September 8th, pulse 70, temperature 98⅖°; 9th, pulse 88, temperature 98⅘°; 10th, pulse 88, temperature 98⅕°; 11th, pulse 88, temperature 98⅕°; 12th, pulse 96, temperature 99°; 13th, pulse 84, temperature 98⅖°; 14th, pulse 72, temperature 98⅕°; 16th, pulse 72, temperature 98⅕°; 18th, pulse 64, temperature 98⅕°.

Case XI.—Mrs. I., a multipara, was not strong; her surroundings were clean. The hand was passed into the vagina, the fingers into the uterus, the forceps also into the uterus. In this case the temperature did not vary on any day more than one-fifth of a degree above or below the normal line. The pulse also was normal throughout.

In all of these cases daily records were kept of the pulse and temperature.

Evidence such as the foregoing, though negative, is strong. Presumably in many of these cases the streptococci were present in the canal. And yet, although the labors were, as a rule, severe, although examinations were frequently made, although the instruments were passed into the uterus itself, and air necessarily freely admitted, in none of them were the streptococci virulent. Does not this point to the conclusion that they will not become infective without extraneous assistance?

But in addition to many such records which could be produced by the obstetricians of this continent, let us look at some investigations by European experts. Merman (quoted by Williams) in 900 cases did not douche the vagina, yet had so little fever that he thinks there is no room for the idea of auto-infection. Leopold, of Dresden, in a series of cases had only one-fifth of 1 per cent. (1 in 500) in which the fever could have been due to auto-infection. Surely such records go far to prove that the streptococci of the canal will not of themselves become infective.

Again, the remark by Smyly, of Dublin, at the late meeting of the British Medical Association, confirms what has already been said. This was to the effect that women do best who are delivered on the street. In other words, women are not possessed of infective streptococci. The fact is, that Nature has wonderfully provided against danger of infection through the birth-canal. In the first place, streptococci are not found in the majority of women, owing, no doubt, to the fact that the fluids of the canal destroy these organisms. In a considerable number of women, however, streptococci are found, but appear to have lost their infective power. Then at confinement, even those in the canal are swept away by the fluids, or forced out by the head or the placenta. After confinement, the canal is kept freed by the abundant outflowing lochia—the lochia being usually free from all pus-producing organisms.

It would appear, then, that Nature has done her part well. She has made every provision against auto-infection, and it would be a libel upon her to say that she had provided for the possibility of it.

But here we see an illustration of man's power for either good or evil. If his assistance be needed, and he refrains from introducing deleterious matter into the vagina, he does good, and no fever results. If, on the other hand, the woman receives noxious matter from his finger or instrument, then what evil may ensue! As to what the deleterious matter may be which is introduced, while occasionally we know what it is, in the great majority of cases we do not know. Williams says in regard to this: "It appears then that beside the presence of micro-organisms, certain conditions, of which we are yet ignorant, are necessary for the production of infection. . . . It is possible that the organisms which grow in the vagina lack (certain) materials, while those which are introduced directly from without possess them."

Whether these materials are products of bacterial life (as Williams seems to think) or other pabulum necessary to produce infection, we know not. Certain it is, however, that man frequently introduces what is necessary to make the bacteria already there infective, or actually introduces infective organisms. The result is true puerperal disease. And how often, after having himself done an evil, does the author of the mischief shelter himself with the statement: "It is a case of auto-infection?"

One word in regard to that form of fever of which Barnes speaks as endogenetic puerperal fever. The first step in this process he holds to be absorption of the materials that normally have to be taken up by the system after confinement. After describing this he says: "So far there is no poison, no sepsis, but the absorbed matter has to be disposed of in one of two ways: 1. Undergoing normal metabolism, it is used up in the formation of new tissue and in the secretion of milk. 2. The residual portion, not so converted, has to be eliminated by the excreting organs. Now suppose that this healthy process is checked, the retained matter, missing its

proper metabolic changes and destination, undergoes other changes of a noxious character, engendering fever. Here we have the simplest types of endogenetic septicemia."

From this description it is evident that no pus-producing organisms have produced this form of fever. It is produced only by deficiency of excretory power. This condition may be caused by a chill, or other means. Now, whether or not there be room for dispute as to what form of fever this is, it can at least be positively stated that it is not true puerperal fever, which can only be originated by the absorption of streptococci or other pus-producing germs. We believe, then, that auto-infection in any form does not exist, and that, therefore, the term should not be retained.

It may be asked whether any practical benefit will result from the elimination of the word from the obstetric vocabulary. Among other benefits, its elimination will entirely prevent all pre-partum douching of the vagina. For if there be no auto-infection, this measure of "meddlesome midwifery" would no longer be used. It is useless to remove non-pathogenic organisms.

In the second place, the absence of this term should lessen the amount of careless midwifery. So long as it is retained, so long will careless obstetricians have a way of escape from the consequences of their own want of care. That it is sometimes impossible for the attendant to prevent puerperal fever all will admit. He can, however, avoid conveying streptococci or the pabulum necessary for their support into the canal on his hands or instruments. And if the patient is not thus infected, it is seldom indeed that she will be infected, either from the atmosphere, erysipelas, or other cause. Auto-infection being non-existent, the obstetrician should not have the term behind which to shelter, and once let it be fully understood that auto-infection does not exist, the stress of circumstances will certainly tend either to improve the methods or else lessen the practice of all obstetricians who have not fully equipped themselves for the responsibility of their important duties.

A PROPOSAL IN THE INTERESTS OF HIGHER MEDICAL EDUCATION.

By BAYARD HOLMES, M.D.,
of Chicago.

The annual session of our medical schools for 1894 is drawing to an end. A few educators are planning for the new year. Many are dissatisfied with the results of the past, with the methods now in vogue, with the traditions and the present practices of medical teaching. These are the ideas of one of the dissatisfied, of one who believes medicine deserves better things from education, of one who believes in the possibility of improvement. Cannot one or several of our best medical schools adopt such a program as the following:

1. Admit only such students as are already admitted to their respective junior classes in the regular college course; and have in addition credits for (1) chemistry, theoretic and analytic; (2) for biology, one year of laboratory work; and (3) a reading knowledge of French and German.

2. Give to each student, when he completes *two years' work* in the medical course, the A.B. degree.

These requirements for admission and the privilege of the A.B. degree on the completion of two years' work are rational concessions. Any one of the universities for which this is written would have students enough, and, with a proper *quality* of medical teaching, the A.B. degree would not be cheapened thereby. It must not for a moment be supposed that the quality of the first two years of the medical course as now conducted is worthy of such recognition, but the material of that course is not wanting in educational powers. It needs simply better teachers and better methods.

The reason the medical man should begin his professional study so soon depends upon the fact that so much time is required for hospital practice, for travel abroad, and for apprenticeship practice before the real work of the physician's life begins. It is for these reasons that the university is asked for this just concession.

The university body should have no less direction and control of the medical school than it has of the school of history.

Should anyone urge that the poorer communities and the sparsely settled districts need doctors, but cannot command men of such culture and education as are here proposed, he must be reminded that the supply of men fitted for these communities now greatly exceeds the demand, and that there will still be left one hundred and fourteen medical schools supplying this field.

The reading of French and German is necessary to an improvement in the method of teaching as proposed in the next paragraph.

3. Abandon the traditional lectures, which now, by monopolizing, disgrace our medical teaching, and introduce the seminar and the individual laboratory method into every department.

This may need a word of explanation. Lectures are proper for such instruction as is otherwise unattainable, for general instruction on topics of the moment, and for laying out work. Students should have, for example, laboratory and recitation work on the bones. This should be accompanied by a very few lectures and by seminars as often as once a week for each student. For such work *material,*

a library, and *a teacher* (not a lecturer) are necessary. An amphitheater is not necessary, but a laboratory, roomy, well equipped with desks, lockers, and instruments, is necessary. The students should follow a syllabus and use pencil, paper, measures, saw, scales, and many other simple instruments.

Anthropometry should be begun on the students themselves. It is not necessary or desirable that all students should do the same work at the same time. Each student should advance through the work required in his outline as slowly or as rapidly as his abilities and industry permit. The teacher should satisfy himself that each unit of the work is done by any student and the educational object attained before credit is given him. This is contrary to the traditions of our medical schools and to the practice of English and Scotch colleges, but it is the only way in which any of our students learn anatomy now. I have seen a hundred students working quietly and industriously in a microscopic laboratory on this very plan—no bustle, no confusion, nothing but the orderly noise of earnest work. This method is equally adapted to physiology, to materia medica, to surgical pathology, to clinical surgery, to medicine, to clinical medicine, and to operative surgery. All small clinics, and hospital clinics even, should be conducted on the seminar method, *i. e.*, individual research and criticism in small classes.

It would be desirable to tear out the amphitheaters (all but one in each college), upon which we now pride ourselves, discharge the medical orators and rhetoricians, and secure in their places class-rooms, libraries, and teachers of medicine.

It may be objected that this method is not adapted to large classes. It is not adapted to classes at all. It is adapted to students and to almost any number. It is true that by this method a teacher could do his subject and his pupils justice, only by limiting the number of students, but the same limitations apply to the rhetoric method, if good work is insisted upon. Many of these objections are removed by the next suggestion.

4. Divide the school year into short terms of three months each, at the beginning of any one of which the student may begin his work, and at the end of any one of which let him receive his credits or his degree.

The advantages of such a division of the year are already recognized in the under-graduate departments. To an executive educator, the advantages are evident. The medical students are as much entitled to these advantages as the students of Hebrew or political economy. Smaller laboratories will accommodate a class, if one section does the work one term, and another section the next term. A student who fails to graduate now at the appointed spring commencement is disgraced. With the short-term plan, he would not be tempted to hurry on and slight his work, for he could graduate three months later. One teacher can carry through three times as many students equally well on the short-term plan as he can if his work is extended over the whole year.

5. Make the course of study conform to such educational requirements as prevail in other departments of the university, *i. e.*, abandon the iron-clad course of study and substitute a liberal margin of elective work under the supervision of a dean. By this means students would be able to pursue extensive studies in limited fields with a minimum of work in all other departments and thus add greatly to their efficiency as specialists, as scholars, as teachers, or as investigators.

It may be objected that, conducted under such plans, the medical school would not pay. In answer, it is suggested, that there is no more reason why a medical school should pay, than there is why a school of sociology should pay. It is not necessary and it is unjust to conduct a *quasi* medical school so as to earn a few thousand dollars for the university, to be expended in other departments or work.

It may be objected that the present faculties are not able, with their poor pay and their other arduous duties, to conduct such a course of instruction, but it must be remembered that the resources of the community are not yet entirely exhausted.

If medical schools are *educational* institutions and not *business* adjuncts, why should not such modest suggestions as these be even surpassed in forthcoming announcements? It is only by making the medical schools the peers of the best-conducted educational institutions that endowments for them can be expected. It is as absurd to have a medical college attached to a university, as many of them are attached to-day, as it would be to have a special business college in the same relation. In this matter the profession has a right to expect such institutions as, *e. g.*, Harvard, Columbia, and the University of Pennsylvania, to lead.

There are reasons, however, for believing that they will not lead unless they begin soon. The University of Minnesota has during the past year secured a support which makes its future development, under ordinary management, secure. Michigan has now taken advanced ground. But the most hopeful trend of medical education lies in the coöperation of the State Board of Health and the medical school. The University is made to feel the needs of the State Board of Health and it attempts a larger amount of laboratory teaching of State medicine and hygiene than is offered elsewhere. The State also possesses many other functions which will, no doubt, soon be utilized in the

instruction of medical men. The hospitals for the insane, the institutions for the blind, those for the deaf, those for the feeble-minded, the jails and prisons ought to be open to university students as laboratories for investigation and study. Such laboratories none but State universities can ever possess, and such student-supervision would be more powerful for good than a State charities aid society.

ORIGINAL ADDRESS.

THE ARMY SURGEON.[1]

By WILLIAM OSLER, M.D.,
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General Schofield, Mr. Surgeon-General, President Alden, and Professors of the Faculty: At the outset I am sure you will permit me, on behalf of the profession, to offer to the Army Medical Department hearty congratulations on the completion of the arrangements which have made possible this gathering. With capacities strained to the utmost in furnishing to students an ordinary medical education, the schools at large cannot be expected to equip army surgeons with the full details of special training. A glance at the curriculum just completed brings into sharp relief the disabilities under which previous classes must have proceeded to their labors, the members of which have had to pick up at random—in many cases have probably never acquired—the valuable knowledge traversed in the lectures and laboratory exercises of the session. But greatest of all the advantages of an army medical school must be counted the contact of the young officers with their seniors, with the men under whose directions they subsequently have to work. In comparison with their predecessors, with what different feelings and ideas will the men before us enter upon their duties in the various posts to which they have been assigned. Instead of hazy notions—perhaps to one fresh from the Examining Board not pleasant ones—of a central authority at Washington, of a Yama enthroned as Secretary of War, and of an exacting Surgeon-General, the young officer who has enjoyed the delightful opportunities of four months' study amid these inspiring surroundings, which teem with reminders of the glories of the corps and of the greatness of his profession, the young officer, I say, must be indeed a muddy-mettled fellow who does not carry away, not alone rich stores of information, but, most precious of all educational gifts, a true ideal of what his life-work should be.

Members of the Graduating Class: Though to you it may not, to me it seems peculiarly appropriate that the Surgeon-General should have asked a civilian to make an address on this occasion. With the strictly military aspects of your future life you have made yourselves familiar; of the merits and demerits of the army as a career for a physician you have in the past four months heard very much; but about all subjects there are some questions which are more freely handled by one who is unhampered by too particular knowledge, and this is my position, I may say my advantage, to-day. For me the Army Medical Department, so far as particulars are concerned, means a library with unsurpassed facilities, the worth of which is doubled by the liberality of its management; a museum in which I have spent some delightful hours; an index-catalogue, which is at my elbow like a dictionary; and the medical history of the late war, particularly the volumes by Woodward and Smart. Further, I have here and there gleaned in my general reading in the history of the profession of this country facts about the corps and its members. I have read the spirited vindication of John Morgan, who may be called the first Surgeon-General, and I am familiar with the names and works of many of your distinguished predecessors who have left their mark in our literature.

But as I write an aspiration of the past occurs, bringing me, it seems, closer to you than any of the points just mentioned, a recollection of the days when the desire of my life was to enter the India Medical Service, a dream of youth, dim now and almost forgotten—a dream of "Vishnu land, what Avatar!"

Speaking, then, from the vantage ground of my ignorance, let me tell you briefly of the opportunities of the life you have chosen. First among your privileges I shall place a feature often spoken of as a hardship, viz., the frequent change from station to station. Permanence of residence, good undoubtedly for the pocket, is not always best for wide mental vision in the physician. You are modern representatives of a professional age long past, of a day when physicians of distinction had no settled homes. You are Cyprid larvæ, unattached, free-swimming, seeing much in many places; not fixed, as we barnacles of civil life, head downward, degenerate descendants of the old professional Cirripeds, who laid under contribution not one, but a score of cities.

Without local ties, independent of the public, in, while not exactly of, our ranks, you will escape many of the anxieties which fret the young physician—the pangs of disprized worth, the years of weary waiting, the uncertainty of the effort; and perhaps those sorer trials inevitable in an art engaging equally heart and head, in which, from the very nature of the occupation, the former is apt—in finer spirits—to be touched with a grievous sensibility. In change, that leaven of life denied to so many, you will find a strong corrective to some of the most unpleasant of the foibles which beset us. Self-satisfaction, a frame of mind widely diffused, is manifest often in greatest intensity where it should be least encouraged, and in individuals and communities is sometimes so active on such slender grounds that the condition is comparable to the delusions of grandeur in the insane. In a nomad life this common infirmity, to the entertainment of which the twin sisters, Use and Wont, lend their ever-ready aid, will scarcely touch you, and for this mercy give thanks. And while you must, as men, entertain many idols of the tribe, you may at least escape this idol of the cave. Enjoying the privilege of wide acquaintance with men of very varied capabilities and training, you can, as spectators of their many crotchets and of their little weaknesses, avoid placing an undue estimate on your own individual powers and position. As Sir Thomas Browne says, it is the "nimbler and conceited heads that never looked a degree beyond their nests that tower and plume themselves on

[1] An address delivered at the closing exercises of the Army Medical School, Washington, D. C., February 28, 1894.

slight attainments," but "heads of capacity and such as are not full with a handful or easy measure of knowledge think they know nothing till they know all."

Per contra, in thus attaining a broader mental platform, you may miss one of the great prizes of the profession—a position in a community reached in length of days by one or two, who, having added to learning, culture, to wisdom, charity, pass the evening of their lives in the hearts of their colleagues and of their kind. No gift of Apollo, not the Surgeon-Generalship, not distinguished position in science, no professorship, however honored, can equal this, this which, as wandering Army Surgeons, you must forego. Fortunate is it for you that the service in one place is never long enough to let the roots strike so deeply as to make the process of transplantation too painful. Myself a peripatetic, I know what it is to bear the scars of partings from comrades and friends, scars which sometimes ache as the memories recur of the days which have flown and of the old familiar faces which have gone.

Another aspect of the life of the Army Surgeon, isolation in some degree from professional colleagues, will influence you in different ways—hurtfully in the more dependent natures, helpfully in those who may have learned that "not from without us, only from within comes, or can ever come, upon us light"—and to such the early years of separation from medical societies and gatherings will prove a useful seed-time for habits of study, and for the cultivation of the self-reliance that forms so important an element in the outfit of the physician. And, after all, the isolation is neither so enduring nor so corroding as might have fallen to your lot in the routine of country practice. In it may be retained, too, some measure of individuality, lost with astonishing rapidity in the city mills that rub our angles down and soon stamp us all alike. In the history of the profession there are grounds for the statement that isolation promotes originality. Some of the most brilliant work has been done by men in extremely limited spheres of action, and during the past hundred years it is surprising how many of the notable achievements have been made by physicians dwelling far from educational centers—Jenner worked out his discovery in a village; McDowell, Long, and Sims were country doctors; Koch was a district physician.

So much depends upon the sort of start that a man makes in his profession that I cannot refrain from again congratulating you on the opportunities enjoyed during the past four months, which have not only added enormously to your capabilities for work, but have familiarized you with life at the heart of the organization of which hereafter you will form part, and doubtless have given you fruitful ideas on the possibilities of your individual development. Naturally each one of you will desire to make the best use of his talents and education, and let me sketch briefly what I think should be your plan of action.

Throw away, in the first place, all ambition beyond that of doing the day's work well. The travellers on the road to success live in the present, heedless of, taking thought for, the morrow, having been able at some time, and in some form or other, to receive into their heart of hearts this maxim of the Sage of Chelsea: Your business is "not to *see* what lies dimly at a distance, but to *do* what lies clearly at hand." Fevered haste is not encouraged in military circles, and if you can adapt your intellectual progress to army rules, making each step in your mental promotion the lawful successor of some other, you will acquire little by little those staying powers without which no man is of much value in the ranks. Your opportunities for study will cover at first a wide field in medicine and surgery, and this diffuseness in your work may be your salvation. In the next five or ten years note with accuracy and care everything that comes within your professional ken. There are, in truth, no specialties in medicine, since to know fully many of the most important diseases a man must be familiar with their manifestations in many organs. Let nothing slip by you; the ordinary humdrum cases of the morning routine may have been accurately described and pictured, but study each one separately as though it were new—so it is so far as your special experience goes; and if the spirit of the student is in you the lesson will be there. Look at the cases not from the standpoint of text-books and monographs, but as so many stepping-stones in the progress of your individual development in the art. This will save you from the pitiable mental attitude of the men who travel the road of practice from Dan to Beersheba, and at every step cry out upon its desolation, its dreariness, and its monotony. With Laurence Sterne, we can afford to pity such, since they know not that the barrenness of which they complain is within themselves, a result of a lack of appreciation of the meaning and method of work.

In the early years of service your advantages will be fully as great as if you had remained in civil life. Faithfulness in the day of small things will insensibly widen your powers, correct your faculties, and in moments of despondency comfort may be derived from a knowledge that some of the best work of the profession has come from men whose clinical field was limited but well-tilled. The important thing is to make the lesson of each case tell on your education. The value of experience is not in seeing much, but in seeing wisely. Experience in the true sense of the term does not come to all with years, or with increasing opportunities. Growth in the acquisition of facts is not necessarily associated with development. Many grow through life mentally as the crystal, by simple accretion, and at fifty possess, to vary the figure, the unicellular mental blastoderm with which they started. The growth which is organic and enduring, is totally different, marked by changes of an unmistakable character. The observations are made with accuracy and care, no pains are spared, nothing is thought a trouble in the investigation of a problem. The facts are looked at in connection with similar ones, their relation to others is studied, and the experience of the recorder is compared with that of others who have worked upon the question. Insensibly, year by year, a man finds that there has been in his mental protoplasm not only growth by assimilation but an actual development, bringing fuller powers of observation, additional capabilities of nutrition, and that increased breadth of view which is of the very essence of wisdom.

As clinical observers, we study the experiments which Nature makes upon our fellow-creatures. These experiments, however, in striking contrast to those of the laboratory, lack exactness, possessing as they do a vari-

ability at once a despair and a delight—the despair of those who look for nothing but fixed laws in an art which is still deep in the sloughs of Empiricism; the delight of those who find in it an expression of a universal law transcending, even scorning, the petty accuracy of test-tube and balance, the law that in man "the measure of all things," mutability, variability, mobility, are the very marrow of his being. The *clientèle* in which you work has, however, more stability, a less extended range of variation than that with which we deal in civil life. In a body of carefully selected active young men, you have a material for study in which the oscillations are less striking, and in which the results of the experiments, *i.e.*, the diseases, have a greater uniformity than in infancy and old age, in the enfeebled and debauched. This adds a value to the studies of army medical officers, who often have made investigations in hygiene, dietetics, and medicine, so trustworthy and thorough that they serve us as a standard of comparison, as a sort of *abscissa* or base-line. Thus you have demonstrated to us, and to the community at large, the possibilities of stamping out smallpox by systematic revaccination; in civil practice we strive to reach the low rate of mortality of army hospitals in the treatment of typhoid fever and of pneumonia. Many of the most important facts relating to etiology and symptomatology have come from camp or barrack. I often think that army surgeons scarcely appreciate that in their work they may follow the natural history of a disease under the most favorable circumstances; the experiments are more ideal, the conditions less disturbing than those which prevail either in family practice or in the routine of the general hospital. Many of the common disorders can be tracked from inception to close, as can be done in no other line of medical work, and the facilities for the continuous study of certain affections are unequalled. This, which is a point to be appreciated in the intrinsic education of which I spoke, gives you a decided advantage over your less favored brethren.

Your extraordinary range of observation, from the Florida Keys to Montana, from Maine to Southern California, affords unequalled facilities for the study of many of the vexed problems in medicine—facilities, indeed, which in the diversity of morbid conditions to be studied are equalled in no position in civil live. Let me here mention a few of the subjects that may profitably engage your attention. No question is of more importance at present than the settlement, definitely, of the varieties of fever in the West and South. The studies of Baumgarten in St. Louis, and of Guitéras and others in the Southern States, suggest the possibility that in addition to typhoid fever and malaria—the common affections—there are other fevers the symptomatology and morbid anatomy of which still require careful elucidation. In this you will be walking in the footsteps of notable predecessors in the corps, and in the exhaustive works of Woodward and Smart, to which I have already alluded, and which are always available, you will find a basis from which you may start your personal observations. More particularly in this direction do we need careful anatomic investigation, since the symptomatology of certain of the affections in question has much in common with that of the ordinary continued fevers of the North. I may call your attention to the satisfactory settlement of the nature of mountain fever by army surgeons, and need hardly add that the specimens contributed by Hoff and by Girard to this museum demonstrate conclusively that it is in reality typhoid fever.

In the Southern posts malaria with its protean manifestations presents still many interesting problems for solution, and you will leave this school better equipped than any of your predecessors for the study and differentiation of its less known varieties. With positive knowledge as to the etiology, and a practical familiarity with methods of blood-examination, you can do much in many localities to give to malaria a more definite position than it at present occupies in the profession, and can offer in doubtful cases the positive and satisfactory test of the microscope. The hematuria of the South requires to be studied anew—the filarial cases separated from the malarial, and, most important of all, the relation of quinin to hematuria positively settled.

In the more distant posts, where, so far as the soldier is concerned, your opportunities for study may be limited, you may add greatly to our knowledge of the disorders prevalent among the Indians. More particularly do we need additional information as to the frequency of tuberculosis among them, and its clinical history. One of your number, Dr. Edwards, has already furnished admirable statistics upon this point, but the field is still open and much remains to be done. In this connection, too, you may be able to carry saving knowledge upon the etiology of the disease, and enforce regulations for its prevention. You have only to turn to the Index-catalogue to see how scanty in reality are the facts in the nosology of the North American Indian.

At many posts there will be presented to you the interesting effects of altitude, with problems of the greatest physiologic importance. An excellent piece of work may be done upon its influence upon the red blood-corpuscles, in determining whether, as has been maintained, there is an increase numerically per cubic millimeter, so long as the individual remains in the more rarefied atmosphere. Points remain to be settled also upon the effects of altitude upon the chest-capacity, the chest-measurement, and the heart, and our knowledge is still lacking on questions relating to the influence of high altitudes upon many of the ordinary diseases.

To one of you, perhaps, another peculiarly American disease—milk-sickness—may reveal its secret. Our knowledge of its etiology has not been materially increased since the early papers on the subject, which so well described its symptomatology.

These are but a few of the questions suggesting themselves to my mind, to which, as chance affords, you could direct your attention. In a ten or fifteen years' service, travelling with seeing eyes and hearing ears, and carefully-kept note-books, just think what a storehouse of clinical material may be at the command of any one of you—material not only valuable in itself to the profession, but of infinite value to you personally in its acquisition, rendering you painstaking and accurate, and giving you, year by year, an increasing experience of the sort to which I have already more than once referred.

In what I have said hitherto I have dwelt chiefly on your personal development, and on the direction in which your activities might be engaged, but while you are thus laying the foundation of an education in all that relates

to the technical side of the profession, there are other duties which call for a word or two. In the communities to which you may be sent do not forget that, though army officers, you owe allegiance to an honorable profession, to the members of which you are linked by ties of a most binding character. In situations in which the advantages of a more critical training give you a measure of superiority over your confrères in civil life, let it not be apparent in your demeanor, but so order yourselves that in all things you may appear to receive, not to grant favors. There are regions, *in partibus infidelium*, to which you will go as missionaries, carrying the gospel of loyalty to truth in the science and in the art of medicine, and your lives of devotion may prove to many a stimulating example. You cannot afford to stand aloof from your professional colleagues in any place. Join their associations, mingle in their meetings, giving of the best of your talents, gathering here, scattering there; but everywhere showing that you are at all times faithful students, as willing to teach as to be taught. Shun as most pernicious that frame of mind, too often, I fear, seen in physicians, which assumes an air of superiority, and limits as worthy of your communion only those with satisfactory collegiate or sartorial credentials. The passports to your fellowship should be honesty of purpose and a devotion to the highest interests of our profession, and these you will find widely diffused, sometimes apparent only when you get beneath the crust of a rough exterior.

If I have laid stress upon the more strictly professional aspects of your career it has been with a purpose. I believe the arrangements in the department are such that, with habits of ordinary diligence, each one of you may attain not only a high grade of personal development, but may become an important contributor in the advancement of our art. I have said nothing of the pursuit of the sciences cognate to medicine, of botany, zoölogy, geology, ethnology, and archeology. In every one of these, so fascinating in themselves, it is true that army medical officers have risen to distinction, but I claim that your first duty is to medicine, which should have your best services and your loyal devotion. Not, too, in the perfunctory discharge of the daily routine, but in zealous endeavor to keep pace with, and to aid in, the progress of knowledge. In this way you will best serve the department, the profession, and the public.

Generalities, of the kind in which I have been indulging, though appropriate to the occasion, are close kin, I fear, to the fancies fond, that vanish like the gay motes which float for a moment in the sunbeams of our mind. But I would fain leave with you, in closing, something of a more enduring kind—a picture that for me has always had a singular attraction, the picture of a man who, amid circumstances the most unfavorable, saw his opportunity and was quick to "grasp the skirts of happy chance." Far away in the northern wilds, where the waters of Lake Michigan and Lake Huron unite, stands the fort of Michilimackinac, rich in the memories of Indian and *voyageur*, one of the four important posts in the upper lakes in the days when the Rose and the Fleur-de-lys strove for the mastery of the Western world. Here was the scene of Marquette's mission, and here beneath the chapel of St. Ignace they laid his bones to rest. Here the intrepid La Salle, the brave Tonty, and the resolute Du Luht had halted in their wild wanderings. Its palisades and bastions had echoed the war-whoops of Ojibwas and Ottawas, of Hurons and Iroquois, and had been the scene of bloody massacres and of hard-fought fights. At the conclusion of the war of 1812, after two centuries of struggle, peace settled at last upon the old fort, and early in her reign celebrated one of the most famous of her minor victories, one which carried the high-sounding name of Michilimackinac far and wide, and into circles where Marquette, Du Luht, and La Salle were unknown. Here, in 1820, was assigned to duty at the fort, which had been continued in use to keep the Indians in check, Surgeon William Beaumont, then a young man in the prime of life. On the 22d of June, 1822, the accidental discharge of a musket made St. Martin, a *voyageur*, one of the most famous subjects in the history of physiology, for the wound laid open his stomach, and he recovered with a permanent gastric fistula of an exceptionally favorable kind. Beaumont was not slow to see the extraordinary possibilities that were before him. Early in the second decade of the century the process of gastric digestion was believed to be due to direct mechanical maceration or to the action of a vital principle, and though the idea of a solvent juice had long been entertained, the whole question was *sub judice*. The series of studies made by Beaumont on St. Martin settled forever the existence of a solvent fluid capable of acting on food outside as well as within the body, and in addition enriched our knowledge of the processes of digestion by new observations on the movements of the stomach, the temperature of the interior of the body, and the digestibility of the various articles of food. The results of his work were published in 1833, in an octavo volume of less than 300 pages.[1] In looking through it one cannot but recognize that it is the source of a very large part of the current statements about digestion; but apart altogether from the value of the facts, there are qualities about the work which make it a model of its kind, and on every page is revealed the character of the man. From the first experiment, dated August 1, 1825, to the last, dated November 1, 1833, the observations are made with accuracy and care, and noted in plain, terse language. A remarkable feature was the persistence with which for eight years Beaumont pursued the subject, except during two intervals when St. Martin escaped to his relatives in Lower Canada. On one occasion Beaumont brought him a distance of two thousand miles to Fort Crawford, on the upper Mississippi, where, in 1829, the second series of experiments was made. The third series was conducted in Washington, in 1832; and the fourth at Plattsburg, in 1833. The determination to sift the question thoroughly, to keep at it persistently until the truth was reached, is shown in every one of the 238 experiments which he has recorded.

The opportunity presented itself, the observer had the necessary mental equipment and the needed store of endurance to carry to a successful termination a long and laborious research. William Beaumont is indeed a bright example in the annals of the Army Medical Department, and there is no name on its roll more

[1] "Experiments and Observations on the Gastric Juice and the Physiology of Digestion," by William Beaumont, M.D., Surgeon in the United States Army, Plattsburg, 1833.

deserving to live in the memory of the profession of this country.

And in closing let me express the wish that each one of you, in all your works begun, continued, and ended, may be able to say with him: "Truth, like beauty, 'when unadorned is adorned the most,' and in prosecuting experiments and inquiries I believe I have been guided by its light."

CLINICAL LECTURE.

PHIMOSIS AND THE CONDITIONS THAT IT COMPLICATES IN THE ADULT.[1]

By WILLIAM P. MUNN, M.D.,
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The patients shown you to-day will illustrate several phases of that rather common condition, phimosis, and the diseased conditions that are complicated and rendered more difficult of treatment by the presence of phimosis. First, let me direct your attention to these three cases circumcised some time ago and presenting resulting conditions of varying perfection. These men had all of them redundant foreskins, and each of them was the victim of mixed venereal infection; two contracted the initial lesion of syphilis and the simple venereal ulcer or chancroid at or about the same time; one contracted syphilis and gonorrhea at the same time.

In this first patient, Peter M., the sore, then recognized as chancroid only, was situated upon the prepuce just at the junction of the skin and mucous membrane, and was not only difficult to treat but was refractory to treatment. It was apparent that removal of the foreskin was necessary, and if neatly and cleanly done so that the operation-wound should not be contaminated, would lessen the difficulty of treatment by removing the sore at the same time. This was done and an eminently satisfactory result obtained. The fine linear scar can now hardly be seen, there is no thickening of the mucous membrane, and the very slight edema near the frenum will disappear in a few weeks. We have here, then, what may very properly be called an ideal result of the operation of circumcision. In the patient's left groin you observe the depressed, puckered scar left by the wound made in excising the bubo which occurred there as an accompaniment of his chancroid. The incision healed almost entirely by first intention. In the time that has elapsed since the operation, mucous patches in the mouth and other secondary manifestations of syphilis have made their appearance, and the man is now taking mercury and potassium iodid in free dosage.

The next man, you will remember, had secondary manifestations of syphilis and a free gonorrheal discharge. On account of his elongated prepuce it was not only difficult to effectively treat his gonorrhea, but the retained secretion excoriated the mucous membrane of the glans and of the prepuce. With this patient the circumcision was done by the method of first slitting the foreskin with scissors to a point back of the glans, then trimming off the corners of the flaps, and suturing the skin and mucous membrane. The result is not so perfect as in the first patient, but may still be considered satisfactory. In a few months the swelling and infiltration will disappear and there will be little evidence left of operative procedure.

This third patient I wish to place in contrast with the two already shown. He has been subjected to a simple incision of the prepuce in order to facilitate treatment of a mixed sore located on the frenum. As you see, the real object of the incision was not attained, for the long and flabby lower flap of the prepuce has remained in continuous contact with the glans, and the chancroidal process, which was probably serpiginous, pursued its uninterrupted course and has quite destroyed the frenum. This is an excellent example of a bad result due to an incomplete operation. But the present condition is not such as to demand further immediate operation, as the chancroid is now undergoing cicatrization and will soon be quite well. Some points in reference to this man's mixed infection are of sufficient importance to justify a slight divergence from our main subject for their brief consideration. As he opens his mouth you can see the well-marked mucous patches becoming confluent upon the palate just to the right of the uvula; his hair is also coming out, the spots upon the skin are very apparent, and as I now have him lean over and spread apart the buttocks so as to expose the anus you can observe characteristic mucous patches upon the anal mucous membrane. These are incontrovertible evidences of the second stage of syphilis. They are of especial importance in connection with the history given by the patient. Before entering the hospital he had been under treatment by an irregular syphilis-specialist who had so dosed him with mercury on the appearance of the mixed sore upon his penis, that he was thoroughly ptyalized before the appearance of the secondary manifestations. Now note that the saturation of the system with mercury did not prevent the occurrence of the secondary signs. This remedy antagonizes the effects of syphilis, but does not prevent the action of the syphilitic poison or germ. The medication was ill advised because at the time it was given the disease was still a local process and there were no constitutional manifestations to be met by the administration of mercury as a constitutional remedy. The result was the development of ptyalism without any arrest of the onward progress of the disease.

To return to our original subject, phimosis and its relief by circumcision. The man who has just been anesthetized is over seventy years of age. He has an extremely long and very tight foreskin, and in addition you will notice that there is present a free, purulent discharge from the urethra. This discharge is a typical gonorrheal flow, and he gives a history of venereal exposure some ten or twelve days prior to the inception of the discharge. The fact deserves emphasis, that no age is exempt from gonorrhea if exposure occurs. It is usually a disease of young adult life, but it may occur at any age, as I have before seen it in men of about the same age as this patient, and also in little children. Last year we had in the hospital a girl four years old with a gonorrheal vulvitis due to wearing clothes soiled with the discharge from an older patient; a boy five years old who

[1] A Clinical Lecture delivered at the Arapahoe County Hospital, January 30, 1894.

had acquired it in some unknown manner, and a boy eight years old who had gotten it by attempted sexual intercourse with an older girl.

This man's prepuce is so long that it has thus far absolutely prevented not only treatment of the urethra but has rendered cleansing of the fossa back of the glans practically impossible. Immediate circumcision is the only proper treatment for this condition. Dr. Stover, the surgical resident, will perform the operation. Instead of following any of the elaborate and somewhat fantastic methods that have been devised, we follow a method which is simplicity itself and which gives results as nearly ideal as any of which I know. The end of the prepuce is held either between the thumb and forefinger of the left hand or grasped in a forceps held in the left hand. With scissors curved on the flat, the redundant foreskin is then removed at one stroke. Danger of wounding the glans penis by this method amounts to nothing, for the glans glides back from the scissors so quickly and easily that it would be impossible to nip it if the effort were made. As the skin of the sheath retracts the mucous membrane is seen still encircling the glans. Before proceeding any further it is well to arrest all hemorrhage. Firm pressure with a gauze sponge will frequently suffice, but if the artery of the frenum bleeds freely, as in this case, it is seized with artery-forceps and twisted with five or six full turns of the forceps. The mucous membrane is now slit backward on the dorsum of the glans nearly to the corona glandis and the flaps rolled back. There is one precaution to be taken at this point, and that is to avoid entering the scissors-blade in the meatus. Little likely to occur as this seems to be, yet it has occurred, and careless operators have clipped through the glans as well as the preputial mucous membrane. The corners of the reflected mucous flaps are now trimmed off with the scissors, and, after thoroughly cleansing the glans and removing accumulated smegma from behind the corona, the mucous membrane and the skin are sutured with interrupted silkworm-gut sutures. Ten stitches are inserted in this case. The dressing is a simple antiseptic one, powdered iodoform being rubbed into the wound-surface; several layers of iodoform-gauze are applied and held in place by a rubber band. The stitches may be removed in a week, and I anticipate complete primary union.

Our next patient is a younger man, about twenty-five years old. The foreskin is long and lax—no tightness whatever. You can see no sore and there is no discharge present, but as he retracts the foreskin there appear some of the results of irritation from the continuous moisture of retained secretions. The inner surface of the prepuce, and the glans penis as well, are covered with mushroom-like growths varying from an eighth to a half inch in diameter. These vegetations are venereal warts, and this man has about as large a crop of them as you will often see. He has been in the hospital before and had a number of warts clipped off or burned with acids, but there is very prompt recurrence because the predisposing causes, this elongated prepuce and his uncleanly habits, still persist. He has, as you see, no specific venereal disease, and these papillomata are but the results of long-continued irritation and maceration of the mucous membrane. These growths were not apparent until the prepuce was retracted, yet there is a large mass of them demanding immediate interference. This emphasizes the necessity of making a thorough examination of each case by retracting or causing to be retracted the redundant prepuce. Until this is done it is impossible to know or even guess what may be concealed; perhaps such growths as these are, perhaps a malignant growth, an initial lesion, a chancroid, an injury, a mass of retained secretions, or even a calculus. I remember especially the case of a man who was in the medical ward last year, with obscure febrile symptoms. After several days he incidentally gave a history of passing blood with his urine, and it was presumed that it came from his bladder or kidney. On examining him I found that it came either from the penis or the urethra, and at first glance I thought he might have introduced some foreign body into the urethra, but upon retraction of a long and rather tight prepuce there was exposed back of the glans a serpiginous chancroid nearly an inch and a half in its greatest diameter which had eaten into the body of the penis and opened the artery of the dorsum. A few days' further delay in discovering the sore would probably have resulted in entire loss of the glans penis.

The treatment of the present case will be removal of the warts and of the prepuce, and I will ask Dr. Mack, the chief resident, to perform the operation. We will employ cocain-anesthesia in this case. As a preliminary the penis is first rendered bloodless by pressure, after having been wrapped with bichlorid gauze. A rubber band is now placed at the root of the penis and serves to control the return circulation. We employ a ten per cent. solution of cocain and inject two or three drops upon the dorsum, upon each side and near the frenum; in all ten drops are used, representing about one grain of cocain. As the warts are removed, their bases are freely touched with Monsel's solution. The prepuce is removed in the same manner as in the former case, and the artery of the frenum requires torsion here also. Suturing and dressing are the same as before.

The result of continued neglect of the benign papillomata which occur in patients like this may be the conversion of a benign into a malignant process. Almost all cases of epithelioma of the penis occur in patients having just such long foreskins, and the continuous irritation of the retained secretions has been the active factor in causing malignant development.

Here comes the last patient for to-day's clinic. His penis and what is left of his prepuce present a peculiar appearance. He has been circumcised before, but whoever operated upon him failed to break up the adhesions between the glans and the prepuce, and as a result only the end of the glans is visible. All of the movable mucous membrane of the prepuce has also been removed, and so we have the skin almost directly united to the glans, with only the slightest amount of retraction possible. I shall endeavor to improve the present condition, although it is quite impossible to secure a perfect result. The patient is now under chloroform, and I dissect with scissors between the prepuce and the glans until the corona is reached and exposed as fully as possible. In the same careful way, by a circular dissection, the thick, bulging scar-tissue left by the former operation is removed, and what little mucous membrane has been

raised from the surface of the glans by dissection is carefully sutured to the edge of the skin. This is not, by any means, a beautiful result, but it promises to be a great improvement over his former condition both as to the appearance of the member and in increasing the patient's comfort.

In conclusion, gentlemen, it may seem to you that we have given a great deal of time to a trivial and somewhat disagreeable subject. I am aware that abdominal and cranial operations are more attractive to both students and practising physicians than are minor genito-urinary operations, but I am convinced that you will all have to perform such operations as circumcision perhaps many times before you undertake the major operations. There is often more of reputation and of profit for the young physician in a neatly done circumcision, with a good result, than in all the major surgery that comes to him.

CLINICAL MEMORANDA.

DERMOID CYST OF THE OVARY SIMULATING APPENDICITIS.

By M. ROSENHEIMER, M.D.,
of Milwaukee, Wis.

Mrs. A. B., of Goodell, Iowa, aged twenty-six years, of American parentage, came to this city to pay a visit to her parents, who reside here, after a week's sojourn at the World's Fair. When she left her home in Iowa she was in her usual health. She arrived in this city on the 3d of September last. On the 14th she first began to feel ill, with pain in the abdomen, but as she was menstruating at the time and usually suffered some pain during her periods, she attributed the pain to this cause. The pain, however, increased and medical advice was sought. The physician called relieved her by the use of anodynes, and for a short time she felt comfortable. On the evening of the 17th of September I was requested to see her. I found the patient, a small woman, greatly emaciated, complaining of severe pain in her abdomen. She felt constantly nauseated, and vomited whenever anything was taken into the stomach. On examination I found the muscles of the abdomen tensely contracted, the thighs flexed, and the face conveying an impression of intense suffering.

The seat of greatest tenderness was in the right iliac region, extending toward the median line, and a slight elevation was discernible. There was flatness on percussion, extending from the right iliac region to the linea alba. Her tongue was covered with a brownish fur; the pulse was 108; the temparature was not taken. The bowels had not moved since the 14th, and several injections of soap-water, given just previous to my seeing her, brought away very little. I gave the patient's friends to understand that she was seriously ill, and was apparently suffering from appendicitis, though possibly from some other form of intestinal obstruction.

Thinking the condition might possibly be one of fecal impaction, I prescribed several doses of the mild chlorid of mercury and gave directions as to its administration. The family requested that I call again the following day. At 6 o'clock A.M., on the 18th, the patient's father called at my residence and requested me to come at once. On inquiry I found that the woman had retained a part of the calomel and that she had had a passage from the bowels. She still vomited and the pain was not decreased. On local examination I found the elevation in the right iliac region more marked than on the previous evening, and thought I could detect fluctuation. She had not rested any during the night. I made a digital examination per rectum and vagina, and detected a tumor of a doughy consistency in the right iliac region, but on account of the great pain conjoined manipulation was impossible. I advised counsel and called in Drs. Nielson and Hoyer. On consultation an operation was considered imperative by all and proposed to the friends. The relatives readily consented, and on stating the case openly to the patient, after a little deliberation she requested the operation. She was removed to the hospital, and at 12.30 I operated, assisted by Drs. Nielson and Hoyer. An incision was made over the highest point of the elevation, about an inch and a half within Poupart's ligament and parallel with it. On opening the peritoneum about a half-pint of a dark fluid escaped and a tumor presented. After a closer investigation and finding no adhesions, it was decided to remove the mass. The incision was enlarged, and after opening the sac and evacuating some of the contents, a bundle of curled hair about the size of a small orange appeared, and betrayed the character of the growth. With some difficulty it was lifted out, and it was then discovered that the pedicle was twisted, and that the tumor had the appearance of beginning gangrene. The pedicle being securely ligated and cut, the abdomen was freely irrigated with several gallons of sterilized water and the wound closed, with the exception of its lower angle, in which a large rubber drain, wrapped with iodoform-gauze, was introduced. A thick antiseptic dressing was applied and the patient put to bed. She reacted well, and, with the exception of great thirst, felt very comfortable. She was allowed to drink hot water, but took nothing else for the first twenty-four hours. During the following night her temperature became subnormal and her pulse very rapid and feeble, but it responded readily to a nutrient enema and hypodermatics of brandy and strychnin. She did not feel much nauseated and never vomited after the operation. Her bowels moved freely after a glycerin enema on the third day, and spontaneously afterward. The highest temperature attained was 99.6°, on the second day. The wound healed kindly, the drain being removed after twenty-four hours and the opening allowed to granulate. Then followed a rapid and complete recovery, and the woman returned to her home in Iowa five weeks later.

In a letter since received, her husband states that she felt better than ever and was gaining in strength and flesh.

The cyst contained about a pint of a thick greasy fluid, a bundle of hair, and imbedded in its wall was an adult incisor tooth, and a bone resembling one of the long bones of a fetus.

The Ohio State Medical Society will hold its annual session at Zanesville, Ohio, May 16th, 17th, 18th. Dr. N. P. Dandridge, of Cincinnati, is the President, and Dr. Thomas Hubbard, of Toledo, Secretary.

TYPHOID FEVER COMPLICATED BY TWIN ABORTION; RECOVERY.[1]

German Hospital, Philadelphia.

SERVICE OF ADAM TRAU, M.D.

[Reported by ARTHUR J. PATEK, M.D., Resident Physician.]

MRS. M. W., twenty-nine years of age, was admitted to the hospital during the acme of a frank attack of typhoid fever. She was found to be four months pregnant. Fearing a possible abortion, the routine bath-treatment was at first withheld, and for three days the temperature combated with spongings. This, however, proved unsatisfactory, and on the third day the bath-treatment was inaugurated. Thirty baths only were given, the temperature falling on the eighth day, but maintaining a fluctuating character about the normal line for two weeks. Again it rose, fluctuating between 104° F. and normal, and being quite septic in type. The possibility of infection from a dead and macerated fetus was considered, but not long entertained, because of the absence of foul discharges and of any other symptom of a septic condition. On the forty-first day of the fever the patient fell into labor. Though the pains were of but moderate severity, labor progressed nicely, and in three hours' time the patient was delivered of five-month twin fetuses—dead, but otherwise normal. Both placentæ came away entire and there was but an inappreciable amount of hemorrhage. The fever remained uninfluenced by this complication, nor did the patient suffer any ill effects. The temperature remained as before, of a septic character, for one week after the abortion, and then declined to the normal, remaining so until the woman was discharged.

The fever-curve, when viewed as a whole, gives the impression of a distinct relapse in the fourth week of the disease. The temperature is fluctuating, it is true, but there is a distinct rise, more or less gradual, a stadium during which the abortion took place, and a defervescence.

There are two points of interest in this case worthy of special mention: First, that a pregnant uterus should have remained quiescent during five weeks of almost continuous fever—104.4° being the highest recorded; secondly, that there should have been a temperature bordering on the septic type for three weeks continuously before the abortion and one week thereafter, the contents of the womb being throughout in an apparently healthy state. It was evident, therefore, that the fever was but slightly, if at all, affected by the state of pregnancy, but is to be attributed almost entirely to the typhoidal condition.

As a most interesting feature in the case may be mentioned the fact that delivery of both fetuses was accomplished without rupture of either amniotic sac, a circumstance which is certainly of rather rare occurrence.

The Medical Association of Georgia will hold its Forty-fifth Annual Session at Atlanta, Ga., on April 18th, 19th, and 20th. Dr. W. H. Elliott, of Savannah, is President, and Dr. Dan H. Howell, of Atlanta, Secretary.

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[1] Read before the German Hospital Medical Society, December 4, 1893.

PATHOLOGIC NOTE.

DIFFUSE COAGULATION-NECROSIS IN THE SPLEEN FOLLOWING THROMBOSIS IN TYPHOID FEVER AND PNEUMONIA.

BY LUDVIG HEKTOEN, M.D.,
PATHOLOGIST TO THE COOK COUNTY HOSPITAL, CHICAGO.

As is generally well known, areas of coagulation-necrosis in the shape of characteristic anemic or hemorrhagic infarcts are found quite frequently in the spleen after death from typhoid fever. The areas of necrosis are due either to a local thrombosis, to embolism, or to the intensity of the acute inflammatory changes that occur.

Inasmuch as an instance of general thrombosis throughout the spleen and a consecutive diffuse necrosis has not to my knowledge come under observation as far as can be learned from the literature at my disposal, at least not in the early stage, it was deemed advisable to place upon record a description of such a specimen even though the observations are in many respects exceedingly imperfect.

The patient was a man, thirty-three years old, acting as a guard at the World's Fair. He passed through an attack of lung-fever in 1881 and of typhoid fever in 1885. After having been three months in Chicago, he began to suffer from headache, anorexia, general malaise, and occasional epistaxis. Ten days after the first symptoms made their appearance, on June 8, 1893, he was admitted to the Cook County Hospital in a typical typhoid condition, with roseola, increased splenic dulness, etc. He passed through an attack of ordinary severity, the pulse varying from 70 to 100, the temperature occasionally reaching 104° during the fastigium, respiration being from 20 to 30. The treatment was entirely routine—milk-diet, sponge-baths, and salol internally. The intestinal symptoms were never prominent. The man was thought to be on the way to rapid convalescence, but on June 30th there was found an area of dulness and loss of respiratory murmur over the right infra-clavicular region, the lungs being normal elsewhere. On July 3d there was noted hemoptysis, with quite distinct physical signs of a small cavity in the right upper lobe anteriorly; elsewhere in the lungs were sonorous and mucous râles; the general condition was bad. On the 8th there were found small hemorrhages under the skin; the condition in the lungs was practically unchanged. Death occurred on July 11th.

Anatomic diagnosis: Typhoid ulceration of Peyer's patches; mesenteric adenitis; fibrinous pneumonia with softening in the right upper lobe; broncho-pneumonia; intra-splenic thrombosis and diffuse coagulation-necrosis.

The post-mortem examination, made forty-eight hours after death, showed that the body was quite well nourished, five feet eight inches in length. Rigor was fairly well marked; the usual livores mortis were present. The body-cavities were empty and the lining membranes smooth and shining, except for some soft adhesions about the spleen and the adjacent organs, and also over the upper lobe of the right lung. The mesenteric glands were large. The heart weighed 270 grams. There were no endocardial changes; the myocardium was quite firm and the coronary vessels were normal. In the left lung were a few broncho-pneumonic areas as large as a dime, con-

fined entirely within the upper lobe; the tissue in these foci was grayish-red and granular; there were no evidences of miliary tubercles at their periphery. The upper lobe of the right lung contained a cavity as large as a small orange, partly filled with softened, granular material; the tissue immediately about this cavity was grayish and merged imperceptibly into the semi-solid necrotic contents on the one hand, and into the red, solid lung-parenchyma on the other, the principal part of the lobe being occupied by this cavity and the surrounding gray and red solid tissue. No tuberculous masses, old or recent, could be found in any part of the lungs; the glands at the root of the lungs were not caseous. In the lower lobes of both lungs there was considerable mucopus in the bronchi. Sections of the soft borders of the cavity in the right upper lobe, made with the freezing microtome, showed an intense round-cell infiltration, with foci of disintegration, and the more solid tissue showed infiltration into the alveolar walls and fibrinous exudation into the air-cells; frozen sections from the solid areas in the left lung showed uniform infiltration and inflammatory exudation into the air-spaces. Hardened sections and cover-slip smears stained in various ways did not show any tubercle bacilli, but a large number of various kinds of cocci and bacilli. Unfortunately no cultivation-experiments were made. The spleen will be described last. The kidneys were a little increased in size. The cortical markings were indistinct and the cortex appeared yellowish. The liver and the bile-passages were negative to naked-eye examination. The stomach showed only slight acute catarrhal changes. The mucous surface of the ileum showed fifty-six oblong ulcers, corresponding to the location of Peyer's patches; the borders were smooth and in the lower parts of the ileum the floor appeared like granulation-tissue, while in the uppermost ulcers it was composed of the uncovered muscular coat; in all of the ulcers the borders were smooth, the sloughs all discharged, and consequently they were regarded as in the process of cicatrization. Particular attention was given to the condition of the serous coat over the ulcers, with respect to the presence of tubercles, but none was found either here or in the margins of the ulcers. The pancreas appeared normal and there was nothing pathologic found in the cranial cavity.

The spleen measured 14 x 9 x 5 cm. and weighed 250 grams. The surface was covered here and there with small shreds from the torn adhesions between the spleen, the diaphragm, the end of the left lobe of the liver, and the abdominal wall; close inspection showed the capsule to be overspread with a thin, fibrinous layer that could be removed piecemeal very easily; in color the external surface showed a most peculiar, fine mottling of gray, yellow, and light-red. The consistence of the spleen was like that of a firm, normal liver, and the capsule was as tense as it well could be. On the cut surface it was noted at once that every visible vessel was thrombotic, *i. e.*, filled with a firm, granular, light-red, adherent blood-clot; it is possible that the arteries were not so much involved as the veins; at the hilus each large branch of the splenic vein was thrombotic; but the vein itself was free and smooth, and this was also true of the splenic artery and its larger branches. The cut surface presented all over, to a certain extent, the characteristic appearance of anemic and hemorrhagic splenic infarcts; the color was, however, variable, showing mostly shades of light-red and yellowish-red, with a number of rather minute, homogeneous, irregular, and little depressed areas of dark-gray; with the exception of these homogeneous, dark-gray, apparently normal areas the splenic parenchyma was distinctly and markedly but finely granular, and, as already stated, very solid, though easily friable. The Malpighian bodies and the pulp were nowhere distinguishable; there were no foci of softening and suppuration.

The microscopic examination of the spleen showed in general the following: The majority of the vessels and the vascular spaces are filled with fibrinous thrombi; it is not possible to recognize the vessel-walls sufficiently well to establish definitely any inflammatory changes. The principal part of every section consists of diffusely stained areas, made up of irregular masses, large and small, without any visible nuclei, even though nuclear staining methods are employed; among these masses there passes a fine network of diffusely-stained material, and there are also observed normal and degenerate red blood-corpuscles, but they vary greatly in number in the various fields. These areas of necrosis contain every now and then small foci of tissue which retain to a certain extent the normal spleen-structure, but in nearly all are evidences of necrosis in the shape of homogeneous or granular, diffusely-stained, irregular masses; in these last-described areas are often found dense collections of deeply-stained, sharply-outlined, round nuclei. The distinction between the pulp and the Malpighian bodies cannot be made out in the areas of total necrosis. There are no foci of softening or purulent disintegration. Stains for microörganisms show here and there rather long and thick bacilli.

From the gross and microscopic appearances of this spleen it is quite likely that the extensive thrombosis was primary, and that it occurred simultaneously and to an equal degree in all parts of the organ; the thrombosis did not start in an embolic occlusion, because characteristic wedge-shaped embolic infarcts are not demonstrable in this spleen.

As a consequence of this practically complete thrombosis of all the splenic vessels, the splenic tissue underwent a nearly general diffuse necrosis in the form of coagulation-necrosis, only small foci of tissue retaining its normal structure to a recognizable degree. Perisplenic inflammatory changes also developed.

It is much regretted that a bacteriologic examination could not be carried out fully.

It is not possible to say in what exact manner this unusually extensive and uniform thrombosis was brought about, whether it was marantic, which seems very likely indeed, or due to the degree of splenitis present at the height of the attack of enteric fever, or due to a secondary mixed infection.

COLUMBUS MEMORIAL BUILDING.

MEDICAL PROGRESS.

Excision of Larynx, Hyoid Bone, and Five Rings of Trachea for Malignant Disease.—MACDONALD (*British Medical Journal*, No. 1722, p. 1423) has reported the case of a man, thirty-nine years old, suffering from intense

dyspnea and dysphagia, due to a cartilage-like tumor springing from the larynx and diagnosticated myxosarcoma. Breathlessness had been present for six months, and evidences of laryngeal irritation for more than three years. The dyspnea had progressively increased in intensity, and kept the patient in a state of constant fear of suffocation. From the exterior the larynx and the neoplasm together appeared to be the size of a large orange. The growth spread laterally and up and down, as if the whole front of the neck were a solid mass. The ordinary stomach-tube passed with great difficulty down the esophagus, and it could not be determined whether the esophagus was involved or not. The walls of the larynx were so compressed, and breathing was so difficult, that little could be learned on laryngoscopic examination. The general health appeared good. It was decided to perform a preliminary tracheotomy, to be followed, if possible, by a removal of the mass. Ten days after the performance of a low tracheotomy the mass was incised and found to be almost extra-laryngeal, but involving the thryoid cartilage, the hyoid bone, the upper part of the trachea, and the whole of the soft parts surrounding these structures in front to the level of the skin. The pharynx was slightly involved, but the esophagus seemed to be free. A median incision was made in the whole length of the tumor, and two lateral incisions following the hyoid bone as far as the carotids would permit. The mass was now dissected out from below upward. The hemorrhage was profuse, but principally from the upper portion of the thyroid gland. On arriving at the part around the epiglottis and the hyoid bone, it was found impossible to avoid opening into the pharynx. A strong effort was made to save the epiglottis, but immediately below it the pharynx was opened from side to side. This large gap was carefully sutured over a rectal bougie, and finally fixed to the structures in front. The external wound was left open to facilitate drainage and to avoid the troublesome burrowing of pus that is likely to follow operations in the neighborhood of the trachea. The patient made an excellent recovery. The wounded pharynx gave no trouble, nor was there any difficulty in swallowing after the second day. After the lapse of three months an opening into the mouth was established, and the wound in the pharynx was closed. At first articulation could be better performed without instrumental aid, the epiglottis seeming to take the place of the natural larynx, but subsequently the man became adept in the use of an artificial larynx.

Successful Operation for Spina Bifida with Meningocele.—Stone (*Omaha Clinic*, vol. vi, No. 10, p. 438) has reported the case of an infant that presented a spina bifida in the lower lumbar region and a meningocele just in front of the left parietal eminence. There were no evidences of spinal irritation, and the action of the sphincters was preserved. For a week after birth no material change was noticed in either of the tumors, except that they became more full and tense when the child cried or worried, and relaxed during tranquillity. At this time, however, the meningocele began to diminish in size, while the spina bifida increased in size. The child meanwhile thrived and seemed to suffer no inconvenience from the presence of the two lesions. At the end of two months the cranial opening had closed, leaving only a slight elevated thickening of the bone at the site of the previous fissure. The spina bifida, on the other hand, continued to increase in size. In view of these conditions a portion of the fluid was withdrawn, and a dram of a solution of iodin, 10 grains, potassium iodid, 30 grains, glycerin, 1 ounce, was injected into the sac, and the child kept upon its back for some time. The injection was followed by marked prostration, together with loss of appetite and extreme irritability for several days, and apparent general muscular soreness. The tumor soon resumed its previous size and continued to grow larger. Twelve days later about half of the contents of the tumor were withdrawn by aspiration, and a compress adjusted. The walls of the cyst began to yield and fluid to escape. A radical operation was now decided upon. The child was at the time eighty-four days old. The infant was placed upon its left side, the tumor exposed, and an incision about 6 cm. long made parallel with the spinal column, and about 1½ cm. to the left of the median line. After the fluid contents of the tumor had been evacuated, a second smaller cyst was found at the base of the larger. The walls of the larger sac contained no large nerve-filaments. The sac was dissected out and ligated as close to the spinal cord as possible. After the removal of redundant tissue the outer wound was also closed by suture, a considerable amount of tissue being included in the coverings, to act as a plug for the spinal opening. For two or three days after the operation the little patient continued in a stupor, with the fontanels sunken and the pupils contracted. After the fourth or fifth day the stupor gradually passed away and the child progressed to complete recovery. A ligature-abscess formed, but healed without trouble after discharging. The child was in good health a year after the operation.

Atrophy of Shoulder-muscles in the Sequence of Pleurisy.—Thévenet (*Lyon Médical*, 1894, No. 5, p. 157) has reported the case of a cook, fifty-eight years old, who, although having been exposed in the course of extended travel to numerous sources of infection, had seemed to have escaped all. He had, however, had four attacks of acute articular rheumatism, of which the third was complicated by a left-sided pleurisy, attended with a copious effusion. The fluid was spontaneously absorbed in the course of two months, but at the end of this time a little flattening of the left side of the chest was apparent, which became more pronounced in the course of the subsequent few months. When the man came under observation in his fourth attack of rheumatism, five years after the third, the left side of the chest was found greatly flattened and contracted, its circumference measuring an inch and three-quarters less than that of the right side at a corresponding point. In addition, all of the shoulder-muscles were notably atrophied, particularly the deltoid. Elevation of the arm was brought about almost solely by the trapezius. The arm itself was but little wasted, although its circumference a short distance below the acromion was but little less than that of the opposite member in a corresponding situation, in spite of the fact that the right was the more used. Moreover, the man complained that for two years there had been progressive loss of strength in the left upper extremity.

The weakness, however, could not be traced to any particular group of muscles. The dynamometer registered sixty upon the right and but twenty-five upon the left. In addition, cutaneous sensibility to touch, to puncture, to hot and to cold, was impaired upon the left half of the chest, the left shoulder and the left upper extremity. The anesthesia diminished progressively toward the periphery. It was believed that hysteria could be excluded and that the sensory and trophic changes were to be ascribed to the previous pleurisy.

Congenital Hydronephrosis Cured by Nephrectomy.—ADLER (*Deutsche medicinische Wochenschrift*, 1894, No. 7, p. 151) has reported the case of a child that at the age of two years began to show evidences of abdominal pain and distention, particularly upon the left side. After medicinal measures had been exhausted without avail, an exploratory puncture was made, and showed the swelling to be due to an accumulation of fluid containing small amounts of urea. An incision in the linea alba below the umbilicus disclosed the presence of a tumor occupying almost the entire abdominal cavity and compressing the intestines into a small compass beneath the liver. The wall of the sac was sutured to the abdominal wound, then opened and a portion excised. The tissue removed proved to be renal structure. Nearly a pint and a half of pale, clear fluid containing a moderate amount of urea and a small proportion of albumin was evacuated. After the operation the child was in good condition and the tumor slowly but gradually diminished in size, although the fistula persisted and urine was passed but seldom (about every second day) and in small quantities by the natural channels. Nephrectomy was not undertaken at this time, from a fear that the right kidney might not be in good condition. At a later date, however, the right kidney being detected in its proper position and not appearing of unusual size, and, further, the urine passed by the urethra being clear and without morbid constituents, while that from the fistula was turbid, albuminous, and contained renal epithelium, nephrectomy was determined upon and with some difficulty performed. The subsequent behavior of the case was entirely satisfactory, and at the end of four weeks the wound had closed and presented but a small granulating surface. The urine was now passed by the natural channels in larger amount than before and was of normal quality. The general condition of the child was also improved.

Hemeralopia.—At a meeting of the Medical Society of Nürnberg held some months ago, VEITH (*Münchener medicinische Wochenschrift*, 1894, No. 5, p. 97) made an interesting contribution to the subject of the etiology of hemeralopia. He detailed the occurrence of an epidemic of this uncommon affection during the months of April and May in an institution for the treatment of diseases of the eye. Twenty cases were observed. In all the acuity and fields of vision remained normal, but double or treble the usual amount of light was necessary for normal vision. In two-thirds of the cases xerosis conjunctivæ was present on either side of the cornea in the zone of the palpebral fissure. In all of these the bacillus of xerosis was found. In two cases the xerosis had extended to the cornea. There had been no exposure to intense light. The patients were not all derived from the poorer classes; some were well nourished, and all ages were represented. Investigation disclosed the interesting fact that similar epidemics had been observed from time to time in Nürnberg, and always in the spring. Similar epidemic prevalence of hemeralopia had also been reported in other places, likewise in the spring of the year and in marshy regions. From these facts the conclusion is reached that hemeralopia is probably an infectious disease, which may occur in epidemics, like other infectious diseases. The affection appears to depend upon certain local and periodic conditions. Individuals debilitated by nutritive disturbance seem especially predisposed to the infection. It is probable that the disease is dependent upon an exciting agent whose nature is not yet known.

THERAPEUTIC NOTES.

The Treatment of Tuberculosis in the Country.—DATZENKO (*Vratch*, No. 44, p. 1209; *Rev. de la Tuberculose*, 1893, No. 4, p. 382) relates some interesting observations upon pulmonary tuberculosis, made in the course of a period of ten years in country practice. There were in all 87 cases, 24 from the better class, and 63 from the peasantry. Of the former, 5 were cured, 6 died, 4 were improved, 6 remained unchanged, and in 3 the condition was aggravated; of the latter, 1 was cured, 29 died, 8 were improved, 14 remained unchanged, and in 11 the condition was aggravated. This marked disparity between the two classes of cases was due not only to hygienic and dietetic differences, but also to the fact that the peasants regarded the disease as incurable. The treatment employed was purely hygienic and dietetic. As much time as possible was spent in the open air, and a nutritious diet, including large quantities of eggs and milk, was insisted upon. Cod-liver oil was given in addition. To several creosote was administered in small doses. In the winter applications of cold water were made to the general surface of the body, and in the summer cold baths were taken. Medicines were only employed symptomatically. As a rule, improvement became manifest within a week of the institution of systematic treatment. Fever soon disappeared, and with it night-sweats; the anemia diminished in intensity; the bacilli in the sputum became fewer in number, and the expectoration progressively less in amount; the physical signs indicated a sclerotic process in the affected structures, and at the end of a year the patient was greatly improved in appearance. Of the six cases in which a cure was brought about, one had presented induration of the lungs; three, softening; two, cavities. Etiologically three of these gave the impression of having been contaminated by others; while in the remainder the transmission appeared to have been hereditary. All of the patients were young, between fourteen and twenty-four years of age.

For the Dysphagia of Laryngeal Tuberculosis.—

℞.—Cocainæ hydrochlorat. . . . gr. x.
Acid. boric. . . . . gr. iv.
Glycerini . . . . . ♏ xv.
Aquæ destillat. . . . ad f℥j.—M.
Ft. applicatio.
S.—Apply topically. *Practitioner*, No. 308.

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THE OCCURRENCE OF DEFINITE TYPES OF EPIDEMICS OF CHOLERA.

THE differences in the extent, duration, and malignity of the various epidemics of cholera have long been a matter of comment, and KOCH, in his earlier writings on the subject, directed attention to two distinct classes of outbreaks, one explosive in onset, and often almost as suddenly disappearing, the other setting in insidiously, spreading gradually, perhaps never attacking a large number of individuals at one time, and generally dying out with the same slowness with which it commenced.

The development of the whole doctrine of the infectious diseases is the outcome of a putting together of the results of investigators who have attempted to acquaint themselves intimately with an individual infectious disease, and now for the first time we are able, thanks to the extreme care with which epidemics have been studied since the advent of the bacteriologic era, to clearly differentiate the two types of epidemic cholera, and to apply the knowledge thus gained in interpreting the varying characters of epidemics of other diseases.

The symptomatology of *epidemics*, as observed by the modern hygienist, is as definite and decisive as that of most *diseases*, and yet perhaps no more definite or decisive. In an epidemic, as in a disease, it is sometimes possible to make a diagnosis from a single symptom—but this is not the common experience—and in the majority of cases it is only by a careful consideration of all the phenomena involved that a certain diagnosis can be reached.

We shall attempt, therefore, to describe briefly, first, the main characteristics of each of the two types of epidemics, as they are seen in Asiatic cholera, and afterward to point out how there may be more or less marked deviations from the orthodox behavior, and even how there can be a definite blending of the two types in a given epidemic.

In an epidemic of cholera of the first type, individuals are attacked simultaneously in all parts of the affected region, and in this sudden outbreak no direct connection between the cases is traceable. In the second type, there is no even distribution of the choleraic patients; on the contrary, the disease appears in distinct groups or foci of individuals, and even in these groups the members are not taken ill at the same time, but one after another falls sick in chain-like progression. If we were to represent graphically the course of the epidemics, the curve corresponding to the first class of outbreaks would show a sharply ascending limb, rising suddenly to a high point, and then again almost as abruptly falling to near the base-line; the curve representing the second type would rarely go more than a short distance above the base-line.

It is evident that an epidemic of the first type can be accounted for only by the sudden and more or less even distribution of the infectious agent over the whole of the affected region, while in epidemics which conform to the second type the virus is not generally distributed, but is slowly communicated from one individual to another.

Now on analysis it will be seen that there are only a few conceivable ways in which a microscopic virus can be suddenly and evenly distributed over a large area of the population; practically, the only *viæ* to be thought of are the air, the water, the ground, and the food. Insects may be left out of consideration here, for many of the most violent outbreaks of cholera have occurred during the cold winter months. As to the air, while it is true that recent experimental evidence has shown that cholera-bacilli may under certain favorable conditions be carried to a few people by its agency, yet the actual transmission of the disease in this way has never been

demonstrated; and even if we leave out of account the speedy death of the cholera-bacilli on drying, it does not seem possible that distribution could take place through the air with that rapidity and evenness which would have to be presupposed did we grant such an origin for an explosive epidemic. From the many observations which have been made, the ground, too, notwithstanding the protests of the Munich school of hygienists, may be practically excluded as a carrier of the infectious agent in an epidemic of cholera of this first type. It is possible that small epidemics may be determined through contamination of food-stuffs with cholera-bacilli, but in none of the large outbreaks has the food-supply ever borne any constant relation to the distribution of the cases. By a process of exclusion, therefore, we are compelled in the first type to fall back upon the water as the medium through which the virus must be distributed, and the conclusions arrived at by negative argumentation have lately been manifoldly verified by the positive demonstration in such epidemics of the cholera-bacilli in the drinking-water.

Those who have opposed this view have brought forward the objection that frequently in cities which have suffered from an explosive epidemic, certain houses, or even whole streets, obtaining water from the general supply have been free from cases of the disease, and that, therefore, the distribution of the infectious material was too uneven to be accounted for by a contamination of the water-supply. If, say they, the water is charged with the choleraic virus, and everybody drinks the water, then everybody should have cholera. But in order that this objection may have any weight, it is necessary that the three following conditions obtain: 1. The virus must be soluble in water, and so permit an absolutely even distribution throughout the water-supply; 2. All individuals should drink the same amount of water under precisely the same circumstances; and 3. The susceptibility for infection must be the same in all individuals.

We have, however, abundant evidence of variations in individual predisposition to cholera, aside from the influences of filth, faulty nutrition, overcrowding, and occupation. It is easy to see, too, how the relations of different individuals to the contaminated water can bear on the possibilities of infection. Thus, while one man drinks scarcely any water, another may consume large amounts daily, and among those who drink the water it is necessary to consider not alone the amount taken, but the time of taking, whether on an empty or on a full stomach, what the conditions of the gastric and intestinal functions are at the moment, and whether or not excess of any kind has recently been indulged in.

But it is the conception generally held of the way the virus is distributed in the water which is farthest from the truth. The infectious material does not exist in the water in solution. In "water-epidemics," be they of cholera or of typhoid fever, we have to deal with comparatively crude *suspensions* of the bacilli, and it is to this fact that we are to look mainly for the explanation of the little irregularities which sometimes occur in a generally even distribution. Moreover, it is exceptional that the bacilli are present in infected water in large numbers—they are never present, for example, in anything like the amounts which we see in a bouillon-culture in the laboratory, but are relatively sparsely distributed. When we consider this fact, and also the irregularities which might follow the attachment of bacilli to firm objects, or to the walls of the conducting pipes, and those consequent on variations in the rapidity of the current in different parts of the system, the only wonder is that an outbreak can assume the generally even character so often seen.

All the points which we have here mentioned have been brought forward by Koch in his description of the cholera in Germany during the winter of 1892–93. He quotes, too, the answer of Farr to those who objected to the latter's view (based on the finding of eels in different parts of the water-system) that the virus in the epidemic of cholera in England in 1866 was spread through the drinking-water, owing to faulty filtration. It reads as follows:

> "Eels, as we have seen, were found in the water in a certain number of houses in East London. To argue that in hundreds of other houses no eels were found, and that therefore the company never distributed eels in the district, would be absurd. The fallacy of such reasoning is transparent. It assumes the form: If no eels are found in the waters of a certain number of houses, none exist in the waters of any houses. As the eels are limited in number they cannot be distributed universally, and the fact that they were discovered in one house and not in another would depend on laws and circumstances so intricate as to make the ascertained distribution anomalous, but not necessarily more anomalous than the distribution of the lower forms of organized matter, to which the phenomena of cholera in man are due."

We turn now to the second type of epidemic, in which the cases occur in groups (cholera-nests), the

members of which are stricken successively rather than simultaneously, and are all perhaps the offspring through several generations of a single primary case. While it is possible in some instances to trace a direct connection between the cases, it is not strange, considering the complicated nature of human intercourse, and the multiplicity of ways other than direct by which the bacilli could pass from the feces of one individual into the alimentary canal of another, that as a rule there is failure to discover all the links in a given chain.

If all cases of cholera were severe enough to come under the observation of physicians, if the danger of infection by the feces of a patient began or ended with his symptoms, and if contagion occurred only through direct contact with infected individuals, then, in spite of the intricate relations of commerce and society, we might possibly, with the aid of thorough bacteriologic examinations, succeed in making out and keeping track of each of the mem bers of a chain.

We know now, however, that cases of cholera occur in which the symptoms are so mild that they pass unnoticed, that there are even instances, unfortunately, in which considerable numbers of cholera-bacilli are present in the feces of an individual who has been exposed to infection, without the slightest disturbance being manifest, the person presenting absolutely no symptoms and making no complaint. We know further that in the ordinary course of the disease, the cholera-bacilli are present in the feces both before the onset and after the subsidence of the acute attack; and when, besides the direct contamination with the feces of cholera-patients, we remember the indirect methods of transmission through the linen, the clothing, the bedding, the food, or by insects, we can understand in a dense, and especially in a fluctuating populace, the impossibility of keeping track of the exact method of distribution of the microörganisms.

From what we have said, it will be apparent that the two types of epidemics of cholera may often—indeed, must often—be combined. In an epidemic, say, of the first type, which in the beginning is pure (*i. e.*, in which each of the early cases has arisen through infection by water), there must soon appear little secondary epidemics scattered throughout the place, which are true examples of the "chain-like" type; and again, it is easy to conceive how a single or multiple "nodular" epidemic, beginning definitely as type two, could be followed by a local or general explosive outbreak, depending on a local or general contamination of the water-supply.

A little reflection will teach that the cholera-curve, under certain circumstances, may not be decisive for the type of an epidemic under consideration, for if the water be only slightly contaminated, the bacilli being extremely sparsely distributed, the line of the curve may be low; or on the other hand, a multiple nodular epidemic may break out under such peculiar conditions as to make its curve approximate closely to that ordinarily seen in type one. The insufficiency of single symptoms for the diagnosis of the type is thus made strikingly evident. It will be seen that each epidemic should be studied for itself by a skilled hygienist, who will be able to decipher the puzzling symptom-complex, and to decide as to the nature of the primary epidemic, the origin of secondary or tertiary epidemics, and how much of the outbreak belongs to the one and how much to the other type.

TOXIC HYSTERIA.

In The News of October 28, 1893, we discussed the subject of traumatic hysteria, and sought to show that the recognized stigmata of hysteria, as established by the labors of the French school especially, are being utilized to some extent to characterize an artificial neurosis, which is called rather crudely "railway spine." We now come to another aspect of hysteria, which, if not of such daily importance as that aspect of the disease brought about by trauma, is still a major question in pathology, and of grave significance in diagnosis. We refer to the toxic origin of hysteria.

When Briquet wrote his classic treatise on hysteria, in 1857, he quoted as examples of the disease in the male the cases of seven men, of whom, by more than a coincidence, four were workers in lead. He himself seems to have been impressed with this significant fact. Two at least of these patients had presented some of the ordinary symptoms of lead-poisoning, so that in them the hysteric stigmata were in the nature of epi-phenomena, or post-phenomena, clearly distinguishable, but yet likely to be confused with the symptoms of saturnism by a careless observer. These cases presented a type which may still be seen occasionally; and this type presented two classes of nerve-symptoms—first, those that were directly due to the physical effects of the poison upon nerve-tissue, and, second, those

that were purely hysteric. This embodies the vital distinction upon which we would insist here. The proposition is that among the causes of hysteria must be included various toxic substances, among which the most prominent are alcohol, lead, mercury, carbon disulphid, tobacco, and morphin.

Alcohol has long been recognized as an hysterogenous poison. In this country, in fact, it is probably the only one of the group named that would be recognized generally as possessing this quality. The toper is such a common sight in hospitals that all his defects are recognized. Among males it is now thoroughly established that two causes especially, alcohol and trauma, are active in the production of hysteria. In 1874 Magnan described the hemi-anesthesic form of chronic alcoholism, a type which can leave no doubt of its hysteric nature. Later, Gautier, in describing the symptoms of chronic absinthism, indicated the hysteric character of some of them.

But one of the most notable contributions to the subject of toxic hysteria was the paper by Letulle, on the hysteria of mercurial poisoning. He showed conclusively that mercurial poisoning may be the cause of hysteric stigmata, such as tremor, anesthesia, paralysis, etc., and that this tremor, which of course is not identical with the organic tremor caused by mercury, is shown to be hysteric by the fact that it has been cured by esthesiogenic agents. Somewhat analogous results have been obtained in cases of lead-workers, already referred to. Landolt and Oulmont, in 1878, made the statement that saturnine hemi-anesthesia (one of the most common of the hysteric manifestations of lead-poisoning) can be transferred, and even cured, by magnets. Guinon, in his recent monograph on the exciting causes of hysteria, places lead-poisoning in the front rank.

The victim of the morphin-habit may display some of the stigmata of the grand neurosis. These are most likely to be observed during enforced abstinence from the drug, and hence may complicate the period of treatment and convalescence. It is needless to point out that a knowledge of this fact may give the physician great advantage and confidence under circumstances in which otherwise uncertainty and confusion might exist.

It does not appear strange, when the fact is attentively considered, that the various poisons should have an hysterogenous effect. We observe that this power has two methods of action: First, by the general toxic effect upon the nervous tissue; hence by lowered tone and resistance which permit any inherited or acquired neurotic tendency, as hysteria, to assert itself. Second, by a more direct psychic impression, such as shock, fright, or anxiety, which is the natural consequence in many persons of the knowledge that they are poisoned. This latter method of action is observed in those cases especially in which the poison has been taken accidentally, or not by voluntary act, as in the cases of lead, mercury, and, in fact, most other poisons. Hence this action is strictly analogous to that of other moral and physical causes of hysteria, such as trauma, acute disease, and violent emotion. This is a most important phase of the subject. Cases have occurred of long-continued hysteric perversions of the stomach, as anorexia and vomiting, after the ingestion by accident of a supposed violent poison, which in itself was really harmless, as in one reported case, in which saltpeter had been taken for Epsom salts. A somewhat similar case has recently come to our notice, in which a lady consulted a physician for a slight sore-mouth, caused by an ill-fitting set of artificial teeth. She was told that she was poisoned dangerously by mercury absorbed from the vulcanite plate. She immediately developed a train of hysteric symptoms, including tremor, of which the specialist proceeded to cure her. It is sufficient to say that she never had had true mercurial poisoning, but only the shock of being told that she had.

The anxiety and mental depression of some persons with chronic lead and mercurial poisoning are almost pathognomonic of the condition. These are purely psychic phenomena, and are closely analogous to some of the mental stigmata of hysteria. Hence they form a natural and fertile soil upon which may flourish a whole train of truly hysteric phenomena.

The symptoms of toxic hysteria are readily grouped among the now well-recognized stigmata of the great neurosis. But some of them have special prominence. The most common are tremor, anesthesia, paralysis of various kinds, and anorexia and vomiting. The list cannot be strictly limited, because it is possible that any form of hysteria can develop when an active and exciting cause exists; but those symptoms only are indicated that are most common. Paroxysmal hysteria is not so common as the inter-paroxysmal or permanent stigmata.

Closely allied in its hysterogenous power to these various toxic substances is ether. Surgical anesthesia may produce one or more of the hysteric symptoms. Such cases are frequently overlooked, but they may confuse the prognosis of cases, and they have ere now even figured in medico-legal proceedings. Persistent and violent tremor, purely hysteric, has followed ether-anesthesia, and even threatened to frustrate the object of the operation. The remedy has been found in a proper diagnosis. When chloroform and ether were introduced into practice queer complications sometimes arose from their powerful psychic influences and hysterogenous effects. Physicians were held responsible for the production of grave nervous complications—generally hysteric and usually misunderstood—and for even puerperal mania. Happily times are better, but these things are not altogether impossible even to-day.

The importance of the study of toxic hysteria cannot be gainsaid. As the symptoms closely simulate those of the organic action of the various poisons, they are most naturally confused with these latter, and the case must bear a double burden of disease. Nothing can be more discouraging, because the hysteric perversions will stereotype and perpetuate the appearance of the organic affection. Witness the tremor of mercurial poisoning, the hemi-anesthesia of lead-poisoning, and the vomiting of a supposed poisoning by saltpeter. Without a proper diagnosis and elimination of these stigmata it is not too much to say that there can be no progress made in the successful treatment of these cases. From a medico-legal standpoint the all-importance of diagnosis is obvious.

DANGER TO THE ARMY MEDICAL DEPARTMENT.

The Army Appropriation Bill, as reported by the Committee on Military Affairs to the House of Representatives, provides that no more appointments of assistant surgeons in the army are to be made until the number (now 125) is reduced to 90. As the army is not reduced, and as all the medical officers of the army are kept busy, this appears to be a very unwise attempt at economy. It would of course put an end to the Army Medical School for at least five or six years. The bill also maintains the reduction of the appropriation for the Library of the Surgeon-General's Office to $7000 instead of $10,000, as it used to be, and as it certainly ought to be, to meet the demands of the medical profession of this country; and it reduces the amount allowed for the purchase of medical supplies from the usual sum of $185,000 to $150,000. This means that new instruments and new drugs cannot be obtained by medical officers, and that the officers and enlisted men of the army cannot have the benefit of the improvements in methods of treating disease and injuries which are now so frequently discovered or devised.

The members of the medical profession of the country should inform their representatives in Congress that this is unwise economy, and that they should seek to increase the efficiency of the army medical department rather than to diminish it.

EDITORIAL COMMENTS.

One of the Difficulties of the Country Physician is described by a valued correspondent as follows:

I had been attending the ten-year old son of an illiterate white couple living seven miles in the country. Passing the mother in the road the other day, I inquired as to the boy's stiff leg. "Well, Doctor, 'taint much better. I ben usin' one remedy tho', that ef I could have kept it up I b'lieve 'twould er cured him." "What was that?" "I got some of these little red airth-worms, put 'em in a bottle, and hung it in the chimney corner tell they stewed down into a intment, and then rubbed him with it. The fust time hit seemed to help him powerful, but every time we opened the bottle hit made him sick and me too, so we had to quit."

What can rational medicine hope to do when it must deal with such superstition and ignorance? Her boy had a perityphlitic abscess when I called to see him, two months previously. This was treated by incision and drainage and he made a good recovery, except that he still held the leg in a flexed position. I had demonstrated to them how this must be overcome by massage and passive movement, but such silent agencies seemed less potent to their credulous minds than the powerful "airth-worm intment."

There are few things that more persistently and subtly sap the vital and scientific energy of the country physician than this combination of ineradicable ignorance and superstition on the part of those among whom he practises. The physician constantly sees those atrocious examples of medical cruelty and filthiness into which the primitive mind seems to slip as naturally as a crocodile into water. Identically the same fact, however, is seen in the "best society" of urban life, as illustrated by the popular fads and foibles of those who in other matters have good sense. Necklaces of amber beads and Hahnemann's bust are displayed in our drug-stores; faith-cure establishments can pay expensive rents on the most fashionable streets, and a popular newspaper distributes from its own office thousands of bottles of "patent" medicine. Verily, it requires a deal of humanitarian good-will and genuine missionary spirit to practise honest and scientific medicine among such folk, who are apparently worthy only of a sane man's contempt. The belief in medical magic will doubtless outlive every other form of superstition that has come down to us from savagery.

Some Dangerous Nuisances of City Streets.—It is almost a daily occurrence that the street-sweeping of certain cities is carried on without proper sprinkling. The result is that a blinding, mouth-filling cloud of filthy dust is raised that floats into every household for squares, and that is sucked into every lung that breathes it. To physicians, who know the danger of this, and even to the decently cleanly citizen of any calling, this is a shame that should not be permitted.

In cities with old-fashioned narrow streets and sidewalks, the ridiculously-small space permitted those who walk is further narrowed, often to four, or three, and even to two feet, by some strange blocks of stone near the edge of the sidewalk, over which people stumble, and by which they are not infrequently hurt. The old laws against profanity should be at least rescinded, or else these stones should be "discharged." They are never used, as all carriages now have steps to aid a few persons in alighting. If they, or the equally useless hitching-posts, were of any use to one or two people, the thousands to whom they are a nuisance might endure their broken shins and ruined dispositions with more equanimity, as they do endure the impertinent extension of door-steps half or three-quarters the way across the sidewalk. But the hitching-posts and stepping-stones, and often the doorsteps are as useless as the buttons on the back of a coat. Would they were as harmless!

The police of at least one of our cities have no sort of an idea that the poor people who happen to live in the houses have any rights, so far as quietness or sleep are concerned. The tyrants who drive the carts and wagons, who condescend to gather the street-dirt, the hawkers, the "musicians"—all the street-owners—bawl and howl at their poor animals or their fellows at all hours and times, and especially at night, with vocal energies to give a fog-horn lessons. The hoodlums, and especially the young ones, from ten to twenty years of age, occupy their every loafing hour of day or night with rivalry as to who can make the loudest, most hideous, and most inhuman yells and yowls. How many are made ill, how many prevented from recovery by these and similarly outrageous city noises?

Old-time and Modern Dentistry.—The sudden rise of the science of dentistry is a remarkable fact, as it is quite clear that the ancients were not far behind us in this art. There followed several thousand years in which the entire science and art consisted in pulling teeth, quite regardless whether the teeth were good or bad. In the memory of living men the public tooth-puller was a frequent offence of village street-corners and is probably still plying his lucrative trade in some parts of the United States. It is but lately that the dentists best known to Parisians were called "arracheurs des dents," or tooth-drawers, who had chairs on the Champs Elysées, where they extracted teeth in the presence of large crowds. It was the popular belief that, in order to support their proclamation that the operation was painless, as soon as the dentist got his pincers firmly fixed on the tooth, he whispered in the patient's ear, "Canaille, if you make the faintest squeak, I'll break your jaw." The arrival of the American dentists, forty years ago, gradually banished these worthies from the public view, and gave dentistry the rank of a profession, and made its processes more humane and scientific. But dentistry is still in France a great refuge for quacks and impostors, as there is no proper legal control of the art and no diploma is required for the practice of it.

Privileged Testimony of Physicians which Cannot be Stricken Out.—Conceding that a physician is an incompetent witness in a given case, upon the ground that his information has been acquired while attending a person as his patient, and which it is against the policy of the law for him to divulge, the Supreme Court of California holds, in the recently decided case of Wheelock *vs.* Godfrey, that if the patient, as one of the parties to a suit, introduces testimony of the physician which, in the face of an objection, would be incompetent, he cannot strike it out upon discovering that it militates against him, without the consent of the opposite party. By offering the witness, and eliciting testimony from him, he in effect declares the witness as competent and the testimony proper. In the absence of objections on the other side, it is the equivalent of consent, and is as binding upon the parties as a written stipulation agreeing to the competency of the witness to testify to the given facts would have been.

Unsoundness of Mind and Incapacity for Business are Correlative.—Unsoundness of mind and an incapacity for the transaction of business are correlative; each implies the other—says the Supreme Court of Indiana in the recently decided case of Teegarden *vs.* Lewis. When a person is so far deprived of reason that he is no longer capable of understanding and acting with discretion in the ordinary affairs of life, he is insane, within the meaning of the law; in other words, want of capacity to act with discretion in the ordinary affairs of life is evidence of unsoundness of mind. And when a person has been found to be of unsound mind, the law infers that he is incapable of transacting business. Not only cannot a person of unsound mind enter into a valid contract, or make a valid will, but he cannot even make a valid gift.

SELECTIONS.

THE PROHIBITION ON CHEMIC INDUSTRY IN AMERICA.

Over a quarter of a century has rolled by since the smoke of battle cleared away and the din of arms ceased to resound throughout America. The arts of peace have been cultivated for a generation, and one by one the oppressive measures, made necessary by a state of war, have been repealed or have lapsed by limitation. Only recently the press heralded the repeal of the Federal Election Laws as "the wiping out from our statute books of the last of the war measures," and all true Americans, victors and vanquished, Republicans and Democrats, all—save a few blood-thirsty non-combatants—rejoiced together over the fact.

But is it a fact? Every pharmacist in the land, from the great manufacturer down to the modest country apothecary who makes a few tinctures and fluid extracts, knows that it is not. He knows that the art and science of pharmacy, the art and science of medicine, and their clients, the sick and suffering of the country,

still groan and labor under a war measure which, however necessary it may once have been in its inception, has for years past been more onerous, unjust, and shameful than any for whose repeal at least one great party has been clamoring—the tax on alcohol for manufacturing and medicinal purposes. It still stands on the statute books, a war burden, after thirty years of peace; a tax on the sick and suffering, a paralyzer of industries, as foolish and short-sighted as it is unjust and iniquitous.

And now, when the proposed revision of the tariff had given the pharmaceutical profession reason to hope for its repeal, or at least mitigation, comes the notice that it is proposed to increase the tax and duties on alcohol.

This is a blunder—a worse than blunder. It is an outrage on a long-suffering class, as well as a blunder from an economical point of view, and one so plain that it would seem that any person of common-sense would see its folly. Let Legislatures and Congress put all the tax they please upon liquor intended to be used as a beverage; let them throw all the difficulties they please around the distillation of and trade in it, and few decent men would care to raise their voices in protest; but when it becomes a question of retaining prohibitory tariffs or taxes on alcohol for use in medicine and in the arts and industries, every sane individual should unite in protest.

The tax on alcohol for these purposes, and the inanities of our laws regulating the registration of trademarks, by which foreign patentees have every advantage over Americans, have paralyzed chemistry and chemical industries in this country, and have forced us to import from Germany and France millions, yes, hundreds of millions, of dollars worth of chemicals, drugs, and medicines that would otherwise have been manufactured in the United States; they have carried hundreds, possibly thousands, of millions of dollars abroad during the past thirty years that should and would have stayed in this country, but for these fool statutes. Further than this, with our vast surplus of cereals, enabling us, were it not for the tariff and taxes, to produce alcohol cheaper than any other country on earth, the United States might have been the exporter of untold millions in chemicals to the balance of the world.

Just as long as we allow Schering, and Merck, and the host of other *Chemische-fabriken auf Actien*, *Farbenwerke*, etc., to patent their goods and register their trade names in this country, without reciprocity, and to appoint their "sole agents" and representatives in this country, through whom all orders for goods must pass (thus creating a monopoly on a monopoly); just as long as we do this, and forbid Americans to manufacture chemicals, by placing the most important article in their manufacture at so enormous price that its use and employment is ruinous—just so long will we be importers, instead of manufacturers and exporters, to the extent of hundreds and thousands of millions of dollars.—*National Druggist*, March, 1894.

THE PREPOSTEROUS CLAIMS OF HOMEOPATHY.

It is time that the preposterous claims to originality made by homeopaths in regard to what they are pleased to call their materia medica were exposed and refuted. As a matter of fact there are few, if any, drugs in the so-called homeopathic list of remedies which are not taken bodily from French or German works on drugs, many of which are either out of print or forgotten. It would be as easy to show that the pretended discoveries of the homeopaths are in fact plagiarism as it is to demonstrate that *similia similibus curantur* is a fallacy in the logical sense of that word.

Every practical student of therapeutics is aware of the fact that all substances, whether fluid or solid, which have any action on the organism produce two apparently opposite and contradictory series of effects, resulting from their exhibition in different doses, or, in some instances, observable in successive stages of their operation. Thus, to take a familiar example, opium acts as an excitant in one dose and as a sedative in another dose, the precise proportions required to produce the several effects varying with the individual, but the two phenomena being presentable in every case. Castor oil may stand for a drug which promotes peristaltic action in one part of its operation and checks it in another, not by producing exhaustion as is too commonly assumed, but specifically, as was found by the experiments made with castor oil during the prevalence of cholera. Better illustrations of the fact to which I allude might be found, but these occur to me as familiar. Now it must be evident that if this be so *every* drug may be claimed as a "similar" by any one desirous of propounding the dogma *similia similibus curantur*, and ignorant or careless of the fact that all drugs have contradictory actions in different doses. The fallacy of the homeopathic system lies in this, namely, that the drugs employed by homeopaths are never given to cure disease in the doses which they allege will produce effects similar to the morbid phenomena they affect to regard as "indications."

In brief, the whole pretence is a juggle. Setting wholly aside the absurdity of infinitesmal doses, the very principle is a fallacy.—Mortimer Granville, *Medical Press and Circular*, No. 2856, p. 107.

CORRESPONDENCE.

MEDICAL PROGRESS IN CLEVELAND, OHIO.

To the Editor of The Medical News,

Sir: At the last meeting of the Cleveland Medical Society, March 9th, nearly three hundred physicians were present. The Society had lately so amended and revised the Constitution and By-laws that physicians may be admitted from all parts of northern Ohio; and in response to the invitations sent out, thirty applications were received for *non-resident* membership. The Society now numbers over two hundred *resident* members, and is steadily growing.

At this meeting Dr. Howard A. Kelly, of Johns Hopkins University, Baltimore, read a paper entitled "A Consideration of Intra-abdominal Pressure, with Practical Deductions applicable to Gynecology." He was listened to with close attention, and the many practical points deduced were received with marked appreciation.

This was the first of a series of papers to be read

before the Society during the year by prominent men from other cities.

Professor Kelly presented to the Society a rare old book—a copy of the work on anatomy published by Vesalius in 1514, and also one published by Tulf, in Amsterdam, in 1716, entitled *The Century of Observations*. These were given for a nucleus around which the Society hopes to gather a large medical library. Several large and valuable private collections have been offered, and the Society waits only for a permanent headquarters in a fire-proof building.

One of our distinguished guests said: "I am glad that I came, as I have never before in my life seen such a gathering in a local medical society. A sort of medical revival must have struck Cleveland. I venture to predict that the enthusiasm shown is indicative of a great future for the Society. The accumulation of a medical library requires time more than anything else. Books are donated rather than purchased, but I am sure that a large medical library will be rapidly collected in this great and growing medical center, through the efforts of your Society."

Dr. M. J. Parker read a paper on "Hypnotism," and ex-Judge Wing opened the discussion by setting forth the medico-legal aspects; Dr. Henry S. Upson following with views from the "medical standpoint."

On the following morning, Dr. Kelly gave a clinic in Charity Hospital before an immense number of physicians, many of whom were from neighboring cities and towns. He first catheterized the ureters in a case of suspected hydro-nephrosis—illustrating in the clinic many things of which he had spoken the previous evening.

The second case was one of retroversion, which he brought into slight anteversion by two sutures through the posterior uterine and anterior abdominal walls. His method of suturing the abdominal wound was much appreciated. He used three sets of sutures, and *all* buried. The last set brings together the cut surfaces of skin—the stitches *not* piercing the epithelial layer, and arranged in semblance to "the walls of Troy." The last operation was one upon a pelvic abscess, which was opened and drained through the vagina.

FOOT-BALL AT WEST POINT.

To the Editor of The Medical News,

Sir: In your issue for March 3, 1894, p. 250, I published some comparative statistics as to accidents from foot-ball, riding, and in the gymnasium at West Point, covering three months, from September 1 to November 30, 1893. On writing to Dr. P. F. Harvey, post surgeon, to learn whether similar statistics had been kept for former years, I find that the only statistics available are in the following table for 1892. For the purpose of comparison I have put the percentages of 1893 and those of 1892 side by side.

Comparative Statement of Injuries to Cadets from Foot-ball, Riding, and Gymnastics at West Point, N. Y., for a period of Three Months in 1892.

1. *Injuries of all Kinds.*

	Number.
Foot-ball injuries, Sept. 1, 1892, to Nov. 30, 1892	37
Injuries in Riding Hall, Oct. 15, 1892, to Jan. 15, 1893	26
Injuries in gymnasium	10

2. *Number of Men.*

Who played foot-ball	27
Under instructions in riding hall	198
" " in gymnasium	101

3. *Days Lost.*

From foot-ball accidents	106
Riding injuries	71
Accidents in gymnasium	38[1]

	1892.	1893.
Per cent. of accidents per man in foot-ball	1.05	1.6
" " " " " riding	0.11	0.09
" " " " " gymnasium	0.10	0.08
" " days lost per man in playing foot-ball	3.93	8.01
" " " " " riding	0.35	0.31
" " " " " gymnasium	0.57	0.15
" " men off duty per diem in foot-ball	1.18	3.01
" " " " " " riding	0.79	0.63
" " " " " " gymnasium	0.64	0.12
" " days lost per accident in foot-ball	2.98	5.01
" " " " " " riding	2.74	3.04
" " " " " " gymnasium	5.80	1.02

It will be observed that there is but little difference in the two series of injuries. The serious disproportion, therefore, against foot-ball, as compared with the two other forms of athletics, seems to be normal rather than accidental.

One other point to which Dr. Harvey calls attention, and of which I was not aware when I wrote the last letter, emphasizes very clearly the relative frequency of the accidents. Foot-ball games, he states, are played only on Saturday afternoons. Instruction in the riding hall is given three times a week, and in the gymnasium six times a week. "In other words," as Dr. Harvey says, "if accidents always happened in the ratio here given, the number which *would* have occurred in foot-ball had it been played as many days as instruction in riding was given would have been *three times* the number stated, and *six times* the number if played as often as instruction in the gymnasium was given.

Very truly yours, W. W. Keen.

1729 Chestnut St., Philadelphia.
March 14, 1894.

NEWS ITEMS.

The Shelby County Medical Society will hold its sixth annual meeting at Shelbyville, Ind., April 9, 1894. Dr. J. M. Adams is the President and Dr. J. W. Rucker Secretary. An interesting scientific and social program has been prepared.

The Laryngological Society of London, at a recent meeting, elected J. Solis-Cohen, of Philadelphia, and G. M. Lefferts, of New York, to honorary membership.

The Louisville Medical Monthly is the name of a new journal, edited by Dr. James B. Steedman and Dr. George M. Warner.

Adolph von Bardeleben, the distinguished German surgeon, celebrated his seventy-fifth birth-day on March 1st.

Dr. James Israel, of Berlin, has been made Professor of Surgery.

[1] 46 days of this lost by one case (fracture).

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ORIGINAL ARTICLES.

THE TREATMENT OF CHRONIC ALCOHOLISM BY HYPNOTIC SUGGESTION.

BY G. E. BUSHNELL, M.D.,
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THE treatment of chronic alcoholism has of late become a matter of especial interest to the medical profession of this country in view of the popularity of various secret "cures" for that condition. No unprejudiced observer can deny that these methods of treatment have cured some drunkards of their addiction to liquor, for periods of some years at least. Although such so-called "specific" treatments have been repeatedly denounced by the medical press, it is a fact that many physicians send patients to the institutions in which such treatment is given, or have adopted or attempted to imitate their medicines. It appears to be generally admitted that strychnin and atropin are the active drugs in these secret compounds, and we may well inquire whether the success of such treatment is or is not due to these alkaloids. During the past three years I have experimented with hypnotic suggestion in the treatment of chronic alcoholism and have obtained results practically identical with those reached by these methods, but in the great majority of cases in less time and without giving a drop of medicine of any kind. It is, therefore, a fair inference that in the methods of "specific" cure the psychic effect produced by the frequently-repeated hypodermatic injections, by the symptoms arising from physiologic doses of powerful alkaloids, and by the expectant attention of the hopeful patient, is of more importance than the character of the drugs employed. It is true that the hypodermatic administration of the nitrate of strychnin was recommended by Russian physicians in the treatment of alcoholism before Keeley became known to fame, yet it is to be noted that Dr. Korona, of Tiflis, who has had a very large experience with this method, raises the question whether its effect may not be largely due to suggestion.[1] This question can only be answered by the experiment, which has never been tried so far as I know, of treating an alcoholic subject with hypodermatic injections of strychnin without allowing him to suspect that the object is the cure of his appetite for liquor. But even if strychnin alone or in combination be granted to exert a specific influence upon the liquor-habit, as the tendency of alcohol is to produce fatty degeneration, the use of so powerful a cardiac stimulant as strychnin is not without danger of causing the sudden death of the patient from over-excitation of a fatty heart. This fact is recognized in the Keeley institutes. A careful examination is made of the heart of all applicants, and those are refused treatment in whom there is any reason to suspect the existence of this degeneration, thus excluding a class which most urgently needs deliverance from the liquor-habit.

The hypnotic treatment of alcoholism appears to be little known in this country. I have been obliged to work without much assistance from the literature of the subject, which is for the most part not easily accessible, and the views which I shall present are almost wholly the result of my own experience. The following is a condensed report of all the cases of chronic alcoholism which I have treated by hypnotic suggestion.

CASE I was that of an American blacksmith, thirty-four years of age. On January 26, 1891, this patient, alarmed by the sudden death of one of his companions from alcoholism, came to me for treatment of the liquor-habit, saying that he knew that he would die within a month if no help was given him. He stated that he had eaten absolutely nothing for two weeks and very little for six weeks, and had consumed an enormous amount of whiskey. For several years his minimum allowance for twenty-four hours had been two bottles of cheap whiskey, one of which he drank during the day while at work, the other during the night. He could not sleep without a preliminary drink of whiskey, and waking in an hour or less was obliged to drink again to procure more sleep, and so spent every night alternately drinking and dozing. He had tried to stop drinking, but an abstinence for a period of nine hours had produced such alarming nervous symptoms that, fearing delirium tremens, he had felt himself forced to continue the habit. Having previously treated him medicinally with very little benefit, it occurred to me that this would be an excellent case upon which to test the merits of hypnotism. I accordingly told him that I had read of a new treatment of which I had no personal knowledge and which I would like to try upon him. An unsuccessful attempt was made to hypnotize him on the following day. A second attempt, on January 28th, was successful, and appropriate suggestions were given. The treatment was continued on Feb-

[1] Wetterstrand: Der Hypnotismus, p. 62. Vienna, 1891.

ruary 3d, 4th, 5th, 6th, 7th, 8th, and 15th. The patient was allowed to drink during the first part of this period. He reported after the first two treatments that the liquor had a "brown" taste and that he found the same quantity much more intoxicating than formerly, so that he was able to reduce the amount consumed without discomfort. After the fifth treatment he felt a sudden repugnance to liquor and returned to announce that he was completely cured. It was with difficulty that he was persuaded to return for further treatment. His health rapidly improved, his appetite for food returned and became for a time enormous, his digestion was good, and his sleep sound and refreshing. He abstained from liquor entirely until November, 1891, when he began to drink again on account of the intolerable itching and burning due to an acute attack of some skin-disease, but perceiving that he was rapidly relapsing into his former excess he consulted a local physician (my station having been changed in July, 1891), who gave him a brief course of treatment after one of the methods of "specific" cure. This removed the returning cravings, and on September 1, 1893, he reported that he was still entirely abstinent.

CASE II.—A Swedish laborer, a very hard drinker, was intoxicated when first treated, on February 17, 1891. The treatment was repeated on the following day, the patient being much under the influence of liquor. On February 19th he presented himself grossly intoxicated, at an hour other than that which had been appointed, and was told to return at the proper time. Taking offence at this he did not come back for further treatment. I met him a month later so improved in appearance as to be hardly recognizable, when he volunteered the statement that as the result of the treatment he could no longer drink whiskey, but that he was still drinking beer. He was seen two months afterward lying in the gutter dead drunk, having probably succeeded in overcoming his distaste for whiskey.

This incomplete case is of interest, because it shows that well-marked temporary results can be obtained from even two hypnotizations given under apparently unfavorable conditions, and that the effect of the treatment does not always manifest itself at once. The patient could drink whiskey on the day after the last treatment, but at a later time, unfortunately I do not know exactly when, it became for a considerable period repugnant to him.

CASE III was an English shepherd, aged thirty-seven, formerly a sailor. He drinks heavily when able to obtain liquor, and was somewhat intoxicated when first treated, on February 22, 1891. After three treatments the patient obtained employment at a distance, and was lost sight of. I supposed that the treatment had not been long enough continued to secure more than temporary results, but happening to meet him on September 1, 1893, he most positively assured me that he had not touched liquor since my treatment of him two years and a half before. The fact of his sobriety was attested by his friends.

CASE IV.—A Scotchman, aged forty-three, a sheep-owner, a man of intelligence and education, drank whenever in town, at first convivially, afterward by himself. He has acquired the habit of sipping liquor during the night in order to sleep. He was hypnotized on the third attempt, on March 13, 1891, and received in all nine treatments on consecutive days. He did not drink after beginning the treatment, and all desire for liquor speedily left him. At the conclusion of the treatment he was unable to taste whiskey without becoming nauseated. He abstained from liquor for about eight months; then having lost his disgust for it he began to drink again, moderately at first, but soon as hard as ever. He then took a course of treatment at a "Keeley" institute in Nebraska, and since then has abstained entirely. The following is an extract from a letter received from him, dated February 31, 1893: "In regard to the two treatments, hypnotic and 'Keeley,' I cannot see any difference between them. They act in the same way—that is, on the mind. Your treatment was every bit as effectual as the Keeley, but I made a great mistake with yours. I expected too much from it. I used to take whiskey when I really did not want it, thinking that my mind was so strong that I could call a halt whenever I pleased, and the result was that the old desire came back, and I believe worse than ever. Of the two treatments I would say that they are both equally good, and will cure anyone that wants to be cured, but neither of them can put a new set of brains into a man. It is for the subject to stay cured; when he is [cured], and not experiment as I did with the hypnotic."

CASE V.—An American, aged fifty, a bartender, drank to excess periodically. When he consulted me he had been drinking steadily for several weeks, and was tremulous and nervous, and he had been with difficulty persuaded by his employer to submit to the treatment. On March 26, 1891, he was hypnotized with great ease, but only to a slight degree, as he continued to talk volubly about his sensations. The treatment was continued March 28th, 29th, and April 5th. The effect of the treatment in controlling his appetite for liquor was not marked. He continued to drink beer, but did not become intoxicated. On April 6th, contrary to my advice, he went with others on a hunting-trip, from which he was brought back in three days very ill. It was stated that he had fallen from the wagon and injured himself. The only injury apparent was a large ecchymosis about the left eye. There were rumors of a fight having occurred, and there was little doubt that the hunting-trip had been little else than a debauch with liquor. The patient was delirious, and could hardly be kept in bed by constant watching. There was constant tremor, which affected the tongue and muscles of the face, so that speech was apparently impossible. The temperature was slightly elevated. He died on the third day after his return. A careful examination of the brain *postmortem* discovered no gross lesions, except dense and old adhesions of the dura over the vertex, enclosing a small cyst which contained colorless fluid. It is my opinion that the cause of death was delirium tremens, that the patient had indulged in whiskey with his accustomed freedom, and that the

effect of the hypnotic treatment had been to cause an intolerance of alcohol, which in his broken health led to a fatal result. (Compare in this connection Case XIV.)

CASE VI.—A German, aged thirty-two, a cavalry non-commissioned officer, has consumed beer in large amounts for years, and recently had been drinking whiskey also to such an extent as to unfit him for the discharge of his duties. Brought for treatment by his captain, December 5, 1891, he himself had no desire to give up drinking, and consented to the treatment with the reservation, as he subsequently admitted, that he would continue to drink if he could. He was readily hypnotized, and received further treatment on December 6th, 7th, 8th, 10th, 17th, 25th, January 10th, 17th, 25th, 31st, and February 17th, 1892. He professed to have lost all desire for beer and liquor after the fourth treatment. It was discovered, however, that he still drank beer when he thought he could do so undetected. He was given five treatments during the month of March, and two in the early part of April, after which he again claimed to be cured. On April 17th he left the post with his troop and made a march of 300 miles through a country where the drinking-water was scarce and bad. On this march he was almost constantly exposed to snow and rain, and had much wearing responsibility; but although opportunities for obtaining liquor were not lacking, he abstained entirely and remained sober after his return until May 18th, when he began to drink again, owing, he said, to the worry and excitement arising from a fire which consumed his company-barrack. After another slight relapse on Decoration Day he remained apparently sober, although he drank beer occasionally, until December 4th, when he became somewhat intoxicated and was admitted to the post hospital as a preventive measure. He then claimed to have a sincere desire to reform, and ascribed his relapses to his inability to resist the solicitations of his friends, yielding from a wish to be sociable, rather than because he had any actual craving for intoxicants. He received occasionally hypnotic treatments during the winter and the early spring, and is thought to have abstained entirely during this period from beer as well as whiskey. In the latter part of April, 1893, he left with his troop for duty at another post, upon his arrival at which he withstood so well his many old comrades who urged him to drink in honor of the meeting, that his captain thought him really cured. But soon afterward, without any known cause, he began to drink heavily again. His term of service expiring in the summer, he was discharged and his present condition is not known.

CASE VII.—An Irishman, aged forty-six years, was a soldier who had served nearly thirty years in the army. He was "a man who," to quote his captain's words, "was never sober except in the guardhouse, or when it was impossible to get rum enough to make him drunk. And for rum he would trade the shirt off his back." He was treated every day for six days, beginning on December 21, 1891, and then at gradually increasing intervals, receiving in all fourteen treatments. The desire for liquor left him after a few treatments, and he remained sober under many temptations for about six months. During this period he made the long march referred to under Case VI. On this march he carried whiskey for some of his comrades who were afraid to trust themselves with it, but felt no desire whatever for it. In May, 1892, his troop left the post for duty in another department, the transfer involving a march of nearly three hundred miles. On this march he became intoxicated once, and also drank a little after reaching the end of his journey. He then remained sober for several months, but finally relapsed completely into his old habits.

CASE VIII.—An Englishman, aged forty-seven years, was a soldier in the same troop as the preceding case. He had served twenty-nine years in the army, and was a most incorrigible drunkard—on the verge of discharge on account of his addiction to liquor. He received eleven treatments, beginning on January 28, 1892, and abstained entirely from liquor for about four months, but became intoxicated while on the march in May, 1892, and continued to drink at intervals for several months, finally becoming as bad as ever.

CASE IX was an American soldier, aged forty-eight years. The patient had suffered many years from insomnia, for which he had consulted many physicians, and had had much ineffectual treatment. He had used beer and whiskey to procure sleep until he had become much addicted to them. Treatment was begun on December 27, 1891, at which time the patient was recovering from the effects of prolonged intoxication, and had been treated for two days with hypodermatic injections of strychnin. He received twenty-eight treatments during the following three months, the relatively prolonged course of treatment being directed against the sleeplessness rather than the desire for stimulants, which was quickly removed. The duration of his sleep increased from an average of two or three hours to six or seven hours, and the sleep became quiet and refreshing. He abstained entirely from alcoholic beverages of every kind for about six months from the beginning of the hypnotic treatment. Whiskey he had a strong dislike for at that time, but beer was not disagreeable to him, and he began in the latter part of 1892 to drink an occasional glass for sociability's sake, but one glass did not excite a desire for more, and he did not become at all intoxicated until the spring of 1893, when, being obliged to spend six weeks away from home without any occupation, he drank beer in larger quantities, and the old appetite for whiskey returning temporarily, he indulged freely in it and was drunk for nearly a week. Returning to his home he received two hypnotic treatments for a recurrence of the insomnia, which is partly a cause and partly an effect of his habits with regard to alcoholic drink, and since that time he has slept comparatively well and has remained sober, although being unwilling to give up the social enjoyment which he finds in a glass of beer with his friends; he will probably relapse again in time.

CASE X was an American, aged thirty-six years,

a laborer, and a notorious drunkard. He had been drinking steadily for about twelve years. He estimates his daily consumption of whiskey to have been more than a quart, but adds that that limit is set only by his inability to pay for more. February 15, 1892, the patient presented himself considerably intoxicated, and was hypnotized with ease. He received treatment every day, and continued to drink moderately until February 21st, when the desire for liquor left him entirely, and he was so confident that he was permanently cured that he would only return for one more treatment, on the 24th. He secured employment in a saloon and gambling-room where whiskey was constantly before him, but did not drink at all until the end of August, 1892. At this time he began to gamble, to which his employer objected, and he lost his situation. Continuing to gamble he lost the savings which he had accumulated during the preceding months of sobriety, and began to drink again, his friends think on account of his losses. He soon appeared to be in as bad a condition as before the hypnotic treatment. His wife, however, states that he did not continue to drink until he was as deeply intoxicated as formerly; also that he was apparently more affected by the same amount of liquor. He left this vicinity soon after his relapse, and has but recently returned. At present he drinks at times to intoxication, but thinks that liquor has not the hold upon him that it had before he received the hypnotic treatment.

Case XI.—An American soldier, aged twenty-nine years, had been addicted to the use of liquor for twelve years. He had been in the habit of drinking greater quantities of whiskey, he says, than any man of his age whom he knows—sometimes as much as two bottles and a half a day. He has had two attacks of delirium tremens, in one of which he ran until completely exhausted, under the delusion that his company officers were trying to kill him. He has repeatedly tried to conquer the habit, and has abstained from liquor for periods of varying length, the longest of which was six months, about ten years ago. At such times of abstinence almost irresistible cravings for stimulants come upon him suddenly—sometimes without apparent cause, but always if he sees others drinking. He has taken no liquor since January 18, 1892. Beginning on February 24, 1892, the patient received six treatments on successive days; also treatments on March 8th, 15th, 24th, and April 24th. The treatment was successful in removing very quickly all desire for liquor. The craving returned for half an hour on March 20th, but he resisted it, and since that time has abstained without any effort. He is confident from past experience that it would have been impossible for him to have remained sober for so long a time unaided.

Case XII.—An American, aged forty-four years, a cattle-owner, used liquor and tobacco to excess. He has suffered with insomnia and has a "tobacco heart." He desires to be cured of the appetite for both liquor and tobacco. The patient received nine daily treatments, beginning on April 2, 1892. He continued to use liquor until on the 7th a drink of whiskey caused an attack of nausea and vomiting which lasted two hours. He could, however, still smoke until the evening of the 8th, when a cigar produced an attack of nausea of briefer duration. Since that time he has abstained from the use of both liquor and tobacco, and has felt no desire for either. His sleep has become quiet and refreshing, and of sufficient length, and his heart gives him no further trouble. He was last heard from on July 7, 1893, at which time he wrote that he was still abstinent, that whiskey had no temptations for him, and that even the smell of it was disgusting, and he regarded himself as permanently cured of the liquor and tobacco habits.

Case XIII.—An American soldier, aged twenty-five years, had been drinking for three years. He received eight hypnotic treatments, the first on April 8, 1892. He felt no desire for liquor, and did not drink at all until detailed for duty at the department rifle range in the summer of 1892, where, the water being bad, he drank beer occasionally, but did not become intoxicated. On his return he continued to drink beer at intervals, but claimed to have no craving for it. He, however, yielded gradually to the attractions of conviviality, and has of late been intoxicated several times. In this case it appears that the indulgence in alcoholic drinks is due rather to a fondness for excitement and conviviality than to any actual physical cravings.

Case XIV.—An American soldier, aged forty-seven, had been drinking for fifteen years. He drinks beer steadily and has occasional "sprees" with whiskey, which last about two weeks. On June 6, 1892, the patient was hypnotized while somewhat intoxicated. The treatment was continued on the three following days, after which he failed to present himself. On June 10th the patient had continued to drink, but found that whiskey affected him much more strongly than formerly. He was admitted to the hospital on the verge of delirium tremens, very nervous and seeing visions, but recognizing them to be hallucinations. He was kept in bed for ten days and the hypnotic treatment suspended. On June 20th the patient said that he recognized that he could no longer drink whiskey and was resolved to abstain in the future. He was hypnotized and the same treatment continued on the two following days. He was sent to another post in January, 1893, where he was seen in the latter part of August. He stated that he had drunk whiskey once, and found it so disagreeable that he had no desire to continue to drink, and that he believed himself to be permanently cured of his fondness for it.

Case XV.—A non-commissioned officer, an American, aged thirty-one, had been drinking for twelve years, chiefly beer, but occasionally as much as a quart of whiskey a day. Ten years ago he abstained from strong drink for five months. Since then he has repeatedly tried to reform, but has always quickly broken his good resolutions. After three weeks of hard drinking he was admitted to the hospital November 21, 1892, suffering with extreme nervousness and hallucinations of sight and hearing. He was kept in bed and treated medicinally until the 27th, when

hypnotic treatment was commenced. He received eight daily treatments and three others at lengthening intervals. The marked improvement in his appearance after this course of treatment and the new zeal with which he performed his duties were matters of general remark. The craving for liquor had apparently left him, and he remained sober until February 23, 1893, when, being in Omaha, he met friends who urged him to drink with them. He refused repeatedly, but finally began to consider that, the day being cold, a glass of liquor would warm him up, and, dallying thus with the temptation, a sudden desire came upon him. He drank until he became deeply intoxicated, and continued to drink heavily for two weeks. Returning to the post, he received ten additional treatments, but continued to drink beer in spite of many vows of abstinence. It appeared that, knowing that he had once tried to abstain and had failed, his comrades joked him about it, and he had not the moral courage to refuse. The beer affected him much more speedily than before the hypnotic treatment. Whiskey he was unable to drink. I finally gave him up as incorrigible. As for his present condition, he still drinks, but not to great excess. He is no longer a "good beer-drinker," although he once prided himself upon being one of the best. Whiskey is still unpleasant to him, and he rarely touches it.

CASE XVI.—An English non-commissioned officer, aged thirty-seven, was induced by his company commander to come for treatment on October 23, 1892. He drank to excess at irregular intervals. The patient was given the hypnotic treatment, with the usual result of loss of tolerance of alcohol, but he continued to drink to excess at intervals of a few months. Being questioned after a period of intoxication, he frankly said that he did not intend to give up drinking, that the only pleasure which he had was in associating with his friends, who were drinking men, and that he could not enjoy their society without drinking with them.

CASE XVII.—An American ranchman, aged fifty, had been for many years in the habit of taking liquor before going to bed in order to procure sleep. The appetite thus acquired has much increased during the past eight years. He has been drinking excessively for several months and is nervous and tremulous when he appears for treatment. He was hypnotized with difficulty on the fifth attempt on December 4, 1892, and received eleven treatments. The patient continued to drink whiskey during the first few days of treatment. In the afternoon of the day upon which the third treatment had been given (December 6th) the desire for liquor left him suddenly and completely. He took a small quantity of whiskey on the following morning, but found it, as he said, "like medicine." Since that time he has abstained entirely and without effort from all intoxicating beverages, and his sleep and general health have been satisfactory.

CASE XVIII.—An American soldier, aged twenty-two, had been drinking for four years. He received eleven hypnotic treatments, beginning January 21, 1893. The patient stated that the desire for liquor which he had formerly experienced was completely removed by this course of treatment. He remained sober while at this post. On April 17, 1893, he left with his troop for duty at another station, since which time his history is not known.

CASE XIX.—An American soldier, aged twenty-nine, had been drinking for twelve years and for the last three years very heavily, sometimes more than two quarts of whiskey a day. He has often tried to give up drinking, but has never been able to abstain for a longer period than one month. On March 25, 1893, the patient came for treatment, weak and nervous, after prolonged intoxication. He was given six treatments on successive days and five others at longer intervals, with the usual result of speedy loss of appetite for liquor. On September 20th the patient came for additional treatment. He had taken no alcoholic drinks since March 23d, but since last pay-day (September 7th), seeing his friends drinking, he has had a return of his former cravings for liquor, but has resisted, awaiting my return to the post. He was given three hypnotic treatments. The cravings for alcohol left him after the first treatment and have not since returned. He has been perfectly sober up to the present time.

CASE XX.—A German soldier, aged thirty-seven, began to drink five years ago on account of bereavements. He becomes intoxicated every pay-day, and thinks that the habit is growing upon him; but he is not a drunkard. He received nine hypnotic treatments, beginning on April 1, 1893. The patient reported after the first treatment that his desire for liquor was entirely gone, and that he could not bear the thought of drinking it. He remained perfectly sober so long as he was under my observation. In July he fell beneath an electric car in Omaha and was instantly killed. At the inquest the conductor of the car testified that the patient had been drinking, but was not drunk. His friends in Omaha are, however, positive that he did not drink at all.

CASE XXI.—An American soldier, aged twenty-seven, had been drinking for about five years. He received eight hypnotic treatments, beginning July 15, 1893. He abstained from liquor for about three months, during the greater part of which time he was absent from the post on detached service. On his return he began to drink again—it is thought for convivial reasons—and was soon afterward discharged.

CASE XXII is an American blacksmith, who drinks to excess periodically. He received three hypnotic treatments in July, 1893, after which he went away on business and was unable to continue the treatment. He drank beer occasionally for several weeks after this, but says that he found that "his mind was off it," *i. e.*, that he did not crave it as he formerly did. Since that time he has abstained entirely from all intoxicating drinks and regards himself as permanently cured.

CASE XXIII.—An American, aged thirty-five, a soldier, has been drinking for ten years and has "sprees" lasting a week or more every few months. He was admitted to the hospital on November 25, 1893, suffering from the effects of drink. He was hypnotized on December 1st and received seven treat-

ments on consecutive days and two others subsequently. He has been abstinent since beginning treatment, and states that he feels no desire for liquor.

Excluding Case II, on account of inadequate treatment, Cases V and XVIII, because of the death of the patients, and Case XX, because the result is not known, there remains a series of nineteen cases which may be classified as follows:

1. Remained abstinent to the present time or when last heard from, 8.
2. Relapsed and abstinent after further treatment, hypnotic or "specific," 3.
3. Relapsed after passing out of reach, 2.
4. Relapsed and sought no further treatment, 3.
5. Relapsed and continued to drink, notwithstanding additional treatment, 3.

It may be fairly claimed that all of the patients were sufficiently influenced by the treatment to have become convinced that they could be cured by a continuance of it. It is, therefore, safe to assume for all of the patients in Class 4 what I know to be true of one (Case XIII), that conviviality has pleasures for them which they have found themselves unwilling to forego. The patients in Class 5 (Cases VI, XV, and XVI) were all non-commissioned officers who were induced by their company commanders to submit to the treatment, and, with the exception of Case XVI in the early part of his treatment, were not themselves desirous of help. These men are restricted by their rank to a narrow circle of intimate friends, who are for the most part drinking men, and total abstinence means for them the loss of almost all social pleasures. The conspicuously bad result in their cases shows well the futility of attempting such reform without the hearty coöperation of the subject. Suggestive treatment can only be expected to remove the physical cravings for alcohol. But, unfortunately, after such cravings have disappeared many motives for the indulgence still remain, such as the influence of associates, fondness for excitement and conviviality, and the desire to forget trouble or disgrace.

In estimating the results here reported it should be borne in mind that the frontier is a most unfavorable place for the cure of alcoholism, on account of the almost universal use of alcoholic beverages by the population and the lack of innocent amusements.

I have never failed to hypnotize a patient who sought treatment for alcoholism. Of the 23 cases here reported, 18 were hypnotized on the first attempt, 3 on the second, 1 on the third, and 1 on the fifth.

The method which I generally pursue is as follows: The patient, who is comfortably seated, is directed to fix his gaze and his attention upon some object before him. It is not necessary that this object should be bright, nor that it be placed so near as to strain the accommodation or cause marked convergence of the optic axes. In the meanwhile, standing behind the patient, I stroke his forehead gently and evenly with both hands. In the great majority of cases the patient's eyes close spontaneously in from two to ten minutes. In some cases the patient is on the point of being hypnotized, but the eyes remain open and must be closed before hypnosis is induced. These cases may be recognized by the fixity of the lids. The patient does not wink, or if winking is still performed, the act is incomplete—the upper lid does not fall so as to completely cover the eyeball. A more effectual, but more disagreeable way of hypnotizing, is to sit facing the patient and look him in the eye, the patient being charged to fix his eyes steadily upon one of the eyes of the physician, which are brought within a foot or two of his own. The psychic effect upon the patient is greater than if he were looking at an inanimate object, and his attention is consequently more easily concentrated. The physician relaxes his accommodation to escape the eye-strain which would otherwise be incurred. The eye-muscles of the patient are necessarily strained by this method, but the pain and in a great measure the conjunctival injection may be removed by suggestions during the succeeding hypnosis. Verbal suggestions may advantageously be employed in connection with either of these methods. If the patient is not hypnotized in fifteen minutes it is, as a rule, best not to persist in the attempt to influence him at that sitting. The second attempt will almost always be successful. Hypnosis being induced, suggestions are given to the effect that the patient will have no craving for liquor; that it will be disagreeable to the taste and unpleasant in its effects; that sleep, appetite, and digestion will be good; that nervousness will disappear, etc. It is well to suggest that there will be no nervousness, no pain in the eyes, and no headache upon awaking, also especially in the case of those who are hypnotized with difficulty that there will be no drowsiness.

The ease with which patients fall asleep increases generally at each repetition of the hypnosis within certain limits. That intoxication predisposes to hypnosis is shown, however, by the fact that a patient who has been hypnotized in two minutes while under the influence of liquor, often requires three or four times as many minutes to produce that result after he has become perfectly sober.

The treatments are repeated, if possible, every day for at least a week, after which they are given once a week for a few weeks, then once a month. The number of treatments necessary must be determined separately for each case, as there are great differences in the individual reaction to suggestion. I

have allowed the worst drunkards to continue to drink during the early part of their treatment, with the restriction that they take no more liquor than is necessary to prevent nervousness and sleeplessness. This concession saves the patient some suffering, and the effect upon his imagination is perhaps greater if he is convinced by actual trial that liquor is becoming more and more unpleasant in its taste and its effects. From three to six treatments generally suffice to remove the craving for alcoholic stimulants in those who abstain. In those who continue to drink, the effect of the treatment always manifests itself in a rapid loss of the acquired tolerance for liquor, which becomes more intoxicating and at the same time more disagreeable, until a point is reached, generally after from five to seven treatments, when it appears to the patient that a sudden change takes place in his appetite. He can often state the exact hour when "the whiskey turned on him," as he is apt to express it. This change he considers so profound and permanent that there is often difficulty in inducing him to return for what appears to him unnecessary additional treatment.

It is an interesting fact that, while it is easy to render whiskey repugnant to the senses of the patient, it appears to be impossible to accomplish this in the case of beer by any number of suggestions. The loss of tolerance and the cessation of cravings for alcohol are reached, however, with as great certainty in the one class of drinkers as in the other.

It might be expected that patients would attempt to excuse themselves in case of relapse by alleging the return of irresistible cravings for liquor. This has occurred in none of my cases, except Case XV, under circumstances already detailed. The difficulty is almost always the temptations of conviviality, unwillingness to offend by refusing "treats," and the like. In the least successful cases the first taste of alcohol reawakens the former cravings. The majority resume their old habits more gradually, and the whiskey-drinker will sometimes drink beer for a considerable period without excess. But in all cases the continued indulgence in drink leads certainly and generally speedily to drunkenness. The relapsed drunkard finds that he has no longer the ability to "carry" liquor upon which he once prided himself. If he does not recognize and respect that fact he is in danger of the deepest intoxication.

The evil effects of alcohol upon the nervous system are marked in cases that have been treated by suggestion, and delirium tremens may result from comparatively slight excess. (See Cases V and XIV.) It is perhaps unnecessary to say that this loss of tolerance of alcohol is due simply to the character of the hypnotic suggestions which have been employed. Hypnotism may be used to produce the opposite effect.[1]

Suggestions the effects of which are not intended to persist should be avoided. It is not necessary to attempt to impress the imagination of the patient by varied suggestions the purpose of which simply is to show the power of the physician over him. Nor is it necessary for the treatment of the great majority of cases that the subject be in the so-called "suggestible stage" of hypnosis. Functions which are not directly under the control of the will, such as sleep, peristalsis, the appetites—natural and artificial, pain, the organic sensations, etc., may be influenced by suggestion in any stage of hypnosis from the slightest drowsiness to the deepest sleep. Even a considerable degree of intoxication is no barrier to the success of such suggestion, as I have repeatedly observed. (See especially Case II.)

Hypnotism is not necessarily exhausting to the patient, as has been claimed. On the contrary, if his nervous energy is not wasted by suggestions which produce fatigue or disgust, he feels refreshed upon awaking, as from ordinary sleep. The dangers of hypnotism, as far as they exist elsewhere than in the imagination of its opponents, are due almost always to an improper use of the method Certainly as employed for the cure of alcoholism there are no dangers to be feared from it which are at all comparable with those arising from a continuance in habits of intemperance.

[1] Liébeault: Thérapeutique Suggestive, p. 109. Paris, 1891.

NOTE ON THE VALUE OF GUAIACOL APPLIED EXTERNALLY AS AN ANTIPYRETIC.

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In The Medical News for January 27, 1894, Dr. Da Costa publishes some interesting clinical remarks on the use of guaiacol externally in reducing high temperatures in typhoid fever and other febrile diseases. Following the observations of Sciolla, Bard, Lannois and others, concerning the powerful antipyretic action of guaiacol applied in this manner, Dr. Da Costa states that he was induced to try its effect in the "systemic fevers." The guaiacol was applied with a camel's-hair brush, and then rubbed in for fifteen minutes with the hand, or covered immediately with an impermeable bandage. Thirty to sixty drops at a time were applied, thirty being about the average dose. A very marked effect on the temperature was noticed, a fall of several degrees occurring through two to three to four hours. The effect was so marked in cases where large quantities were used that Da Costa advises small doses in the beginning—not more than twenty minims, for in-

stance, is advised as an initial dose in a temperature of 103°. During the fall in temperature no ill effects were noted on the pulse or the respiration. In one case, after the temperature had reached its lowest point, there were chills on three occasions, but in the other cases no particular reference was made to excessive sweating or to chills. Dr. Da Costa suggests the possible value of this method of treatment in cases of typhoid fever, in which, for one reason or another, baths are inadvisable.

On the appearance of Dr. Da Costa's note we proceeded to test the action of guaiacol in various cases in Professor Osler's wards at the Johns Hopkins Hospital, with results which are perhaps of sufficient interest to note. Guaiacol has been used in all in eight cases. The skin, generally of the abdomen, was washed carefully with soap and water, and dried. The guaiacol was then painted on with a camel's-hair brush and immediately covered with an impermeable dressing, or else rubbed in for fifteen minutes with the hand, the area being afterward covered with a similar dressing. The results, in brief, are as follows:

Case I.—*Acute pneumonia; fall of 3½° in temperature, with profuse sweating in two hours and a half after the application of guaiacol, gtt. xx; chilliness between three and four hours after the application, with rapid return of fever.*

The patient was a male, eighteen years of age, at the fourth day of the disease (January 30, 1894). The temperature, at 8 A.M., was 102.8°; at 10 A.M., 103°; at 12 M., 104.2°; at 2 P.M., 103.6°; at 4 P.M., 102.8°; at 6 P.M., 99.8°; at 8 P.M., 103.4°; at 10 P.M., 103.6°; at 12 midnight, 104°. At 3.30 P.M., guaiacol, gtt. xx, was rubbed into the abdomen. Between 4 and 6 o'clock there was profuse sweating; between 6 and 8 o'clock chilliness. The pulse fell from 92 to 72 at 6 P.M.; at 8 P.M. it was 112. The crisis occurred on the following day.

Case II.—*Typhoid fever; applications of guaiacol, gtt. xxx (1 c.c.), followed by falls in temperature varying from 3° to 4.5°; profuse sweating; chills or chilly sensations with the reaction.*

The patient was a woman, twenty-four years old. On the ninth day of a mild attack of typhoid fever, the temperature being at about 103°, twenty drops of guaiacol were applied to the outer side of the thigh, without previously washing the skin; no effect was noted. On the two ensuing days six applications of guaiacol, each of thirty drops (1 c.c), were made; the skin was washed and the guaiacol rubbed in with the hand. The falls of temperature varied between 3° and 4½°, the lowest point being reached in from two to four hours. In all instances, shortly after the lowest point was reached there were either chilly sensations or a distinct chill, with a rapid rise of temperature. An example of one of these falls after the application is as follows:

On February 1st, the temperature at 4 A.M. was 102°; at 6 A.M., 103.2°; at 8 A.M., 99.8°; at 10 A.M., 100.4°; at 11 A.M., 103.4°. Thirty drops of guaiacol were applied at 6 A.M.; profuse sweating followed between 6 and 8 o'clock; at 10 A.M. there was a chill. The patient was much relieved by the applications, and expressed a desire that they should be continued. The profuse sweating and the chills or chilliness following the applications had had, however, a visibly weakening effect, and the applications were discontinued. Tub-baths and cold sponge-baths were renewed, and there was an uninterrupted recovery.

Case III.—*Pneumonia; application of guaiacol, ℥ss (2 c.c.), followed by a fall of only, 0.8°; further application of gtt xx followed by a fall of 0.2°.*

A male, aged fifty-four, had acute pneumonia. On February 3d, the third day, the temperature at 8 P.M. was 102°; at 10 P.M., 101°; at 12, midnight, 100.2°; at 2 A.M., 101°; at 4 A.M., 101.2°; at 6 A.M., 102.4°. Guaiacol, ℥ss, was applied at 10 P.M.

At 1.30 P.M., on the following day, guaiacol, gtt. xx, was applied, when the temperature was 103°, with no visible effect. Several counts of the leukocytes, before and after the application of the guaiacol, showed no particular change.

Case IV.—*Typhoid fever; application of guaiacol, ℥j (3.75 c.c.), followed by a fall of temperature of about five degrees in three and a half hours; profuse sweating; chill, with rapid rise of temperature, in about four hours.*

The patient was a woman, nineteen years of age. On February 6th, in the third week of the disease, the temperature at 4 P.M. was 103.8°; at 6 P.M., 103.5°; at 8 P.M., 103 4°; at 9 P.M., 102 3°; at 10 P.M., 99.8°; at 12 midnight, 97.6°; at 2 A.M., 104.2°; at 4 A.M., 103.2°. Guaiacol, ℥j (3.75 c.c.), was applied at 8.30 P.M.; this was followed by profuse sweating between 9 and 12 o'clock, and a chill between 12 and 2. The dose in this case was (accidentally) larger than those used previously, and the effect was correspondingly more marked. The chill was quite severe.

Case V.—*Pulmonary tuberculosis; five applications of guaiacol, ♏xxx; falls in temperature varying from 1.2° to 5.8°, occurring in from one to two and a half hours, with profuse sweating and chilliness.*

The patient was a man, thirty-three years of age, with bilateral pulmonary tuberculosis, with excavations. The fever was remittent, with evening exacerbations. The applications in this case were on each occasion thirty minims (2 c.c.) The sweating was so profuse, and the patient complained so bitterly of weakness and exhaustion after the applications, that they were omitted. An example of a moderate fall is the following:

On February 15th the temperature at 2 P.M. was 101°; at 2 45 P.M., 102.2°; at 3.45 P.M, 100.8°; at 4.45 P.M., 99.8°; at 6 P.M., 101°; at 8 P.M., 102°. Guaiacol, ♏xxx, was applied at 2.30 P.M.; there was profuse sweating during the fall in temperature, and chilliness later on.

Case VI.—*Pulmonary tuberculosis; applications of guaiacol, gtt. xx and ℥ss respectively ineffectual; fall of 4.8° in three hours after ℥j (3.75 c.c.); chill in about four hours, with rapid return of fever.*

The patient was a colored woman, thirty years of age, with evidences of infiltration at both apices.

She had had a steady, continuous fever, varying for three days from 100.6° to 103.4°.

On February 10th, guaiacol, gtt. xx, was applied at 5.30 P.M.; this was followed by a slight chill at 10 P.M.; there was no effect on the temperature.

On February 19th, guaiacol, ʒss (2 c.c.), was applied at 9.20 A.M., the temperature being about 101°, without any effect.

On February 19th, the temperature at 2 P.M. was 102.2°; at 3.50 P.M., 102.8°; at 4.50 P.M., 103°; at 5 50 P.M, 98.8°; at 6.50 P.M., 98°, at 8 P.M., 98°; at 9.30 P.M., 103 6°; at 10.30 P.M, 103°. Guaiacol, ʒj (3.75), was applied at 3.50, followed by sweating and a slight chill between 8 and 9.30 o'clock. This patient was a colored woman, with thick skin, hence, possibly, the inefficacy of smaller doses.

Case VII.—*Acute rheumatism; application of* ♏xxx *(2 c.c.) of guaiacol followed by a fall of 3.4° in four hours, with profuse sweating.*

The patient was a woman, thirty-two years of age, with acute rheumatism. On February 19th the temperature at 2 P.M. was 101°; at 3.50 P.M., 101.4°; at 4.50 P.M., 100.4°; at 5 50 P.M., 99.6°; at 6.50 P.M., 99.2°; at 8 P.M., 98°; at 10 P.M., 101°. Guaiacol, ♏xxx, was applied at 3.50 o'clock; there was profuse sweating during the fall in temperature.

Case VIII.—*Typhoid fever; fall of temperature of six degrees in three and a half hours after the application of 2 c.c.* (ʒss) *of guaiacol; profuse sweating; chill lasting an hour, with a return of the temperature in two hours to a point higher than before the application.*

The patient was a man, twenty-one years of age. On February 3d, the ninth day of the disease, the temperature at 8 P.M. was 104 5°; at 10 P.M., 103 5°; at 12 midnight, 103 8°; at 1 A.M., 104°; at 2 A.M., 103°; at 3 A.M., 100°; at 4 A.M., 98°; at 5 A.M., 103.2°; at 6 A.M., 105°; at 7 A.M., 104 6°. Guaiacol, 2 c.c., was applied at 1 A.M; profuse sweating began at 1.45 A.M.; a chill, lasting an hour, occurred between three and four hours after the application.

In almost all of these eight cases the cutaneous application of guaiacol was followed by a marked fall in temperature. In Case II the first application of only twenty drops had no effect. The dose, however, was very small and was applied to the outer side of the thigh without previous preparation of the part. In Case III the results, with twenty drops and with half a dram, were either negative or very slight. This was a case of pneumonia in a fat man. In Case VII twenty drops and half a dram were followed by slight effect, while a dram (3.75 c.c.) showed a marked result. This case was that of a colored woman, in whom the skin was possibly thicker than in the other patients. The lowest point of the temperature was reached generally in from two to four hours, the average time being between three and four hours. In almost all of the cases there was very profuse sweating, of which in one instance the patient complained bitterly. In the majority of the cases after the lowest point in the temperature was reached there was a rather rapid rise, associated in almost all instances with chilly sensations, in several instances with severe shaking chills, the temperature within two hours generally reaching a point as high or higher than at the time of the application. In none of the instances was there any marked effect upon the pulse or respiration During the fall of temperature there was generally some slowing of the pulse; in the cases in which there were marked chilly sensations with the reaction, the pulse was somewhat quickened. In none of our cases were there symptoms of collapse. The urine showed no marked changes. The breath shortly after the application of guaiacol gave a distinct odor of the drug.

Hence, while the antipyretic action of guaiacol was certainly very striking in these cases, the profuse sweating, the marked chills, in some instances even with small doses, and the decidedly weakening effect which was noted in those cases in which it was frequently repeated, have led us to take a somewhat less hopeful view of its possible value than Dr. Da Costa's experience would suggest; and these conclusions would on the whole seem to agree with those which have been reached by the majority of observers who have recently experimented with this drug. Sciolla (quoted by Stolzenburg, *Berliner klin. Wochenschr.*, 1894, No. 5) used guaiacol in a variety of different febrile affections. He applied the drug with a camel's hair brush to different parts of the body, covering it immediately with a protective dressing. The doses used varied between 2 c.c. and 10 c.c.

In all cases there was a fall in temperature lasting between three and four hours, amounting to several degrees C. This fall was generally associated with profuse sweating. After six or eight hours there generally occurred a rapid rise in temperature associated with a chill or chilly sensations. Shortly after the application of guaiacol the characteristic taste was noticed.

Sciolla determined that the drug was excreted in the urine and in the respiration in from five to six hours without deleterious effects. He concluded that, used in this manner, guaiacol is a prompt and harmless antipyretic.

Bard (*Lyon Medical*, June 4, 1893) used the drug by this method in cases of tuberculosis, erysipelas, and pneumonia. At first he used doses of 3 c.c., but soon diminished the doses to 2 c.c. or 1 c.c., or even 0.5 c.c. He noted the profuse sweating in almost all of the cases, and frequently the following chills. He believes that the drug, applied in this manner, may be of value in some cases of tuberculosis, though he recommends special care in the dose with weak patients.

Lannois (*Lyon Médical*, August 6, 1893) obtained exactly similar results in a number of obser-

vations. He notes, however, that in some instances the local effects upon the skin may be unpleasant. In one case, for instance, in which the drug was applied on an area on which tincture of iodin had been recently painted, there was marked exfoliation of the skin, while in another, in which the sweating was profuse, the skin over the seat of application was raised in quite large bullæ.

Stolzenburg (*Berliner klinische Wochenschrift*, 1894, No. 5) made an extensive series of observations in Senator's clinic with similar results, excepting that he notes the falls in temperature as lasting rather longer—between five and eight hours. At the time when the lowest point was reached there was, in a majority of instances, chilliness, or a definite chill, with a rise in temperature to a point even higher than before. There was almost always profuse sweating. In weak patients he has seen symptoms of collapse. While in most instances no ill effects on the respiration and pulse were noticed, the patients often complained of the weakening effect of the sweating. In a few instances a dark color of the urine was noted, similar to that seen in carbolic-acid poisoning. In his conclusions Stolzenburg states that the initial dose should not be above 2 c.c., and that it should probably never be above 4 c.c. on account of the danger of collapse. On account of the weakening sweats and chills, with the reactive fever, he concludes that the continued use of guaiacol is not to be recommended.

It will be noted that all observers agree as to the efficacy of guaiacol applied externally. Its employment has been so far limited to the fever of infectious diseases of various sorts, but in all it has been efficacious. There can be no doubt also that it is *absorbed* directly through the skin. Lannois (*loc. cit.*) tested in three cases the inhalation of guaiacol in considerable quantities for a considerable time, but without effect. Stolzenburg (*loc. cit.*) tried similar experiments with Curschmann's mask. More recently Linossier and Lannois (*Comp. rend. hebd. de la Soc. de Biol.*, February 9, 1894) have shown that while a small amount was actually absorbed by inhalation, as proved by its appearance later in the urine, this quantity was insufficient to affect the temperature. Its *elimination* has been shown by Sciolla and Lannois to take place by the urine and the respiration. The early appearance of the taste suggests that it appears in the saliva. The elimination, according to Sciolla (*loc. cit.*), is accomplished in from five to six hours. Lannois and Linossier have shown that in most instances traces appear in the urine a quarter of an hour after the beginning of the application. The part to which the guaiacol is applied would appear to have some influence upon the rapidity and thoroughness of the action. This would be suggested by the result in Case II of our series, in which the first application on the external part of the thigh showed no result, while afterward doses but slightly larger applied to the abdomen were so efficacious.

There is, of course, no difference in the effect of guaiacol absorbed through the skin from that which follows its introduction into the system in other manner. Lannois, for instance, showed that its action in enemata was exactly the same, the effects appearing in almost the same time. In one instance we have made a similar experiment, the patient being the same colored woman who figures in Case VI in the earlier part of this note.

On March 4th the temperature at 8 A.M. was 100.7°; at 12 M., 100 2°; at 4 P.M., 99.8°; at 5 P.M., (?); at 6.30 P.M., 100 8°; at 7.30 P.M., 98.8°; at 8.30 P.M., 97°; at 9.30 P.M., 95.2°; at 10.30 P.M., 96 8°; at 11.30, 97.2°; at 12 30, 97.3°; at 4 A.M., 104.2°; at 5.30 P.M. guaiacol, 2 c.c., was given by enema. At about 12.30 there were well marked chilly sensations; there was, however, no very marked sweating. The urine after the application showed a well-marked, smoky, greenish-brown color.

Interesting as may be these results concerning the antipyretic action of guaiacol, there is really little that is new, excepting in so far as they prove the readiness of its absorption through the skin. Exactly similar effects have been shown from the hypodermatic and rectal use of creosote, of which drug guaiacol forms the most important part.

Lépine, who used creosote hypodermatically (*Semaine Médicale*, 1890, No. 20, page 221), noted marked sweating after the injections.

Gimbert (*Gaz. hebd.*, Paris, 1891) also noted similar results from the subcutaneous introduction of creosote—*i. e.*, the sweating, the fall of temperature, the chill with reactive rise in temperature.

Revillet (*Semaine Médicale*, 1891, page 266) used creosote by enemata in doses of from 2 c.c. to 4 c.c. He noted the almost immediate taste of the drug in the mouth, the elimination by the respiration, by the urine, by the saliva, the well-marked antipyretic action, with the profuse sweating, and the subsequent disagreeable chilly sensations. Though the creosote was free from carbolic acid, he noted in one instance, two hours after a dose of 3 c.c., a well-marked dark color in the urine. The exact similarity of all these results with those formerly obtained by the administration of carbolic acid may be noted. Lannois (*Lyon Méd.*, 1882, No. 30), for instance, in speaking of the results of the treatment of typhoid fever by carbolic acid, notes the same train of symptoms—the fall in temperature with profuse sweating, the reactive chill and rise in temperature, the discoloration of the urine. This similarity is, of course, not remarkable when one considers the close chemic relation between guaiacol and carbolic acid.

In *conclusion*, then, from the few experiments which we have made here, and from a consideration of the results obtained by other observers, we are perhaps justified in asserting that guaiacol applied to the skin is readily absorbed into the economy; that its application is followed in most instances of fever by a gradual reduction in temperature, which reaches its lowest point generally between three and four hours after the application; that this fall of temperature is almost always associated with disagreeably profuse sweating; at a variable period, usually a short time after the lowest point is reached, the temperature rises rapidly, generally in association with marked chilly sensations, if not with an actual chill; that a dose of more than 2 cc. is rarely advisable; that exactly similar results are produced by the absorption of guaiacol through any other channel (the rectum, or the subcutaneous tissues); that the antipyretic action is exactly similar to that which has been previously observed to follow a corresponding use of creosote and carbolic acid; that owing to the disagreeable effects of the immediate application of guaiacol (sweating and chilliness) and the weakening effects of the continued use, its employment as an antipyretic, as in the case of carbolic acid and creosote, will probably have but a limited application.

CLINICAL LECTURE.

A COINCIDENT INTRA-UTERINE AND EXTRA-UTERINE PREGNANCY—TWO CASES OF OBLIQUELY-CONTRACTED PELVIS—THE PRIMARY REPAIR OF A LACERATED PERINEUM—STRICTURE OF THE RECTUM FOLLOWING A WHITE-HEAD OPERATION FOR HEMORRHOIDS.[1]

By BARTON COOKE HIRST, M.D.
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COINCIDENT INTRA-UTERINE AND EXTRA-UTERINE PREGNANCY.

Gentlemen: The specimen of a tubal pregnancy that I here present to you was removed a few weeks ago, by abdominal section, from a young woman with a peculiar history. Just four weeks before I saw her she had induced abortion on herself at the fourth month of gestation, by passing into the womb this rubber catheter and its steel stylet that she had bought at a drug-store. Profuse hemorrhage followed, and a few hours later the fetus was discharged. She saw it plainly, distinguished its limbs, trunk, head and face, and from her unprompted description of its development and length it corresponded with the date that she believed pregnancy had reached. She threw the fetus and its placenta down a water-closet. Shortly after the delivery the woman was seized with abdominal pains that increased steadily in severity until she was forced to go to bed. When I first saw her I found the temperature 103°, the pulse rapid and feeble, the abdomen tympanitic and exquisitely sensitive. On vaginal examination, large, tender masses were felt behind and to the right side of the uterus. I concluded, naturally enough, that I had to deal with a case of a common kind in this hospital—septic infection of pelvic tissues from criminally induced abortion. The abdomen was opened the following day, when, to my surprise, I found the conditions characteristic of tubal pregnancy and no sign whatever of septic inflammation. Old clots and a quantity of black blood welled out as soon as the peritoneum was incised, and on removing the right tube a gestation-sac of from six to eight weeks' development was found in it, without an embryo, but with the chorial villi so well developed and so evident that, as you see, there is no mistaking the character of the mass within the tube. Here is an extra-uterine pregnancy that never could have been diagnosticated or even suspected before operation. The intra-uterine pregnancy that must have coexisted with it and the induced abortion completely masked its symptoms. The patient has made a perfect recovery.

OBLIQUELY CONTRACTED PELVIS.

I cannot present to you the next two patients in the flesh, for they are inmates of other hospitals, but I show

Fig. 1.

An obliquely deformed pelvis. (The lines follow the crests of the ilia; the central dot corresponds with the depression below the spinous process of the last lumbar vertebra.)

you their photographs, which are quite as instructive. Figs. 1 and 2 show the pelvis of a young primigravida recently delivered in the Maternity Hospital,

[1] Abstracts from clinical lectures at the Philadelphia Hospital.

under the charge of my friend Dr. Robert H. Hamill, who kindly permitted me to examine her. The girl had developed tuberculous disease of the right knee-joint at the early age of three months. Ankylosis of the joint

Fig. 2.

The same as Fig. 1, but in profile, showing the backward displacement of the left innominate bone.

and atrophy of the limb followed, so that from the time of the first attempts to walk the greater part of the weight of the trunk has been supported by the sound leg. As always happens in such cases, the corresponding innominate bone is displaced backward, upward, and inward, encroaching to some degree upon the area of intra-pelvic space and distorting the shape of the pelvic inlet and canal. The direction of the pelvic canal, too, is altered. The inlet is directed to the unsound side; the outlet toward the sound side. The best known example of this deformity is the unique case described by Mme. LaChapelle, of a young woman who had always borne the weight of the trunk entirely upon one leg, the other being absent. The pelvis was so distorted in consequence that labor was very difficult. I have learned from experience, however, that ordinarily simple, oblique distortion of the pelvis, without atrophy of the sacral ala and ankylosis of the sacro-iliac joint, as in a true Naegele pelvis, is not to be feared. On the other hand, even a slight oblique distortion, along with other pelvic deformity, such as antero-posterior or lateral contraction, is to be dreaded. Cases in the former category may exhibit some slight abnormality in pregnancy or some unimportant anomaly in the mechanism of labor, but the result is usually fortunate. The history of my case bears out this statement. The woman had backward displacement of the womb, and symptoms of incarceration and dysuria suddenly appeared in the fifth month. Eighty-eight ounces of urine were drawn off one morning, although until the night before there had been no difficulty in urination. In labor there was a rather curious anomaly of mechanism —the vertex presented, the occiput was turned forward and to the right, the anterior parietal bone caught on the ramus of the pubis, and the head was laterally inclined, so that the posterior parietal bone descended first into the pelvic inlet and canal. The common Naegele obliquity was reversed. Aside from these two minor complications, there were no difficulties in pregnancy or labor.

The second patient, from the University Maternity, shows a minor grade of the scoliotic obliquely-distorted pelvis. She had congenital syphilis, with some intracranial lesion that determined atrophy and diminished power on the left side. The difference in power between the two sets of spinal muscles has caused a lateral curvature, with the convexity toward the left side. (Fig. 3.) The distortion of the spine necessarily throws the greater weight of the trunk on the left leg, with the same result noted in the preceding case—a displacement of the corresponding innominate bone upward, backward, and inward. This woman is not yet delivered, but I anticipate no special difficulty in labor. A peculiar abnormality at present is a marked lateral tilting of the womb to the left instead of the common inclination to the right side. It was interesting in both of these cases to observe the relation between the spine of the ischium on the affected side and the nearest edge of the sacrum. In the first case it is one finger's breadth nearer on the deformed than on the normal side; in the second there is about half the distance on the deformed that there is on the sound side.

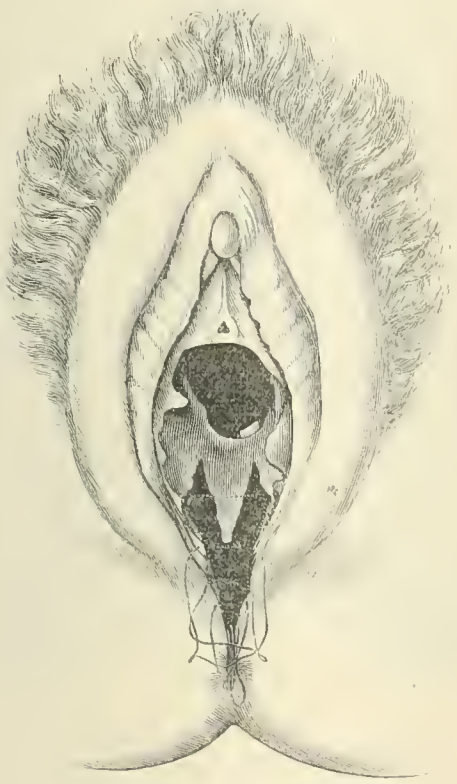
Fig. 3.

A scoliotic pelvis.

PRIMARY REPAIR OF LACERATED PERINEUM.

My next patient has a common condition, but one that should interest you. There has been here a laceration of the pelvic floor in labor at some remote period. There is now a large retrocele as the result of the injury to the levator ani muscles and of the stripping off of the vaginal mucous membrane from its subjacent attachments by the passage of the child's head through the vagina. The method of repairing this old injury must now be familiar to you, for we have had already in this clinic a number of modified Emmet operations. I would prefer, if I could, showing you the method of immediately repairing a primary tear. Were this always done properly there would be few opportunities for the secondary operation. In default of cases of primary

FIG. 4.



Primary repair of lacerated perineum.

tears for clinical demonstration, I have had constructed a gigantic model for class teaching (Fig. 4) that is, perhaps, more instructive than a living woman would be. You observe in this model the perineal tear dividing at the base of the posterior column of the vagina and running up both lateral sulci. It is in these sulcal tears that the levator ani muscle is injured. To restore the pelvic floor satisfactorily and permanently it is necessary to bring the fibers of this torn muscle in firm and accurate apposition. To do this it is very rarely necessary to sew up the sulci separately, as is done in the secondary operation, and this is fortunate for several reasons. In the first place, the operation is tedious and painful, requiring an anesthetic and demanding more skill in plastic surgery than is commonly possessed by the general physician. Further, if one places his stitches in the vagina they must be removed after the vaginal and perineal tears are healed—a troublesome and painful procedure. Catgut stitches would obviate this difficulty, but catgut is not to be depended upon, exposed, as it must be, to the decomposing action of the lochial discharge. The advantages, on the other hand, of the method illustrated on the model are manifold. The stitches are few in number; they can be introduced rapidly and easily, and, tied or shotted on the external perineum, they are easy to remove; an anesthetic is not required in this primary operation, and the ultimate result is perfect if the stitches are inserted deeply enough and with sufficient lateral curve to include a thick bunch of muscle on each side. On this point I can speak with assurance, for I have tested the method thoroughly in hospital and private practice. In the living woman it is necessary to insert, as a rule, two more sutures than are shown in the model, one above and one below the highest stitch. These I have omitted, so as to avoid a multiplicity of sutures that might be confusing. The needle used must be large and well curved. It is convenient to have one set upon a handle, with the eye at the point. This is driven through the tissues threaded with silk wormgut and withdrawn.

UNUSUAL STRICTURE OF THE RECTUM.

The next patient is a woman on whom I operated two weeks ago for a stricture of the rectum. I bring her before you to remove the stitches and to observe the success of the operation. This case interested me much and puzzled me not a little. She informed us that she had been operated upon eight weeks before in another hospital, but for what the operation had been done she could not say. Ever since, she had had great and constant pain in the back, increasing difficulty in defecation, so that she was compelled to take large doses of a laxative every day, and suffered excruciating agony when the bowels did move. On examination, I found a firm, broad annular stricture of the rectum just within the anus, barely admitting the tip of my little finger. There were two angry fissures in ano, and the whole circumference of the stricture was badly ulcerated. The slightest attempt at dilatation caused unbearable pain, and the results of this treatment did not seem to be promising, in view of the deep ulceration and the possibility of carcinoma, an idea that I then entertained. Consequently, I determined on a radical treatment. The recto-vaginal septum was cut with one blade of a scissors in the rectum and the other in the vagina, until the stricture was well exposed to view. This stricture was then completely excised. The end of the rectum was then brought down and stitched to the anus and the wound closed by rectal and perineal stitches, as though there had been a complete tear of the perineum after labor. I am happy to report to you a complete cure. The wound is firmly united, and in perfect apposition; there is entire control over the sphincter, and no difficulty in defecation. From the time the girl left the clinic-room after the operation she suffered none of her former pain. I have recently had the nature of this case satisfactorily explained to me by the surgeon who first had charge of it. He had performed a Whitehead operation for hemorrhoids while his patient was suffering from acute gonorrhea with a

profuse discharge. The area of his operation had been infected and a virulent rectal gonorrhea was the result.

CLINICAL MEMORANDA.

A SUCCESSFUL SIMULTANEOUS TRIPLE AMPUTATION.[1]

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L. J., twenty-one years of age, was admitted to the University Hospital on the night of October 20, 1893, having a short time before been run over by a train on the Philadelphia, Wilmington, and Baltimore Railroad. Upon examination after his admission, it was found that he had sustained a crush of the right leg extending to the knee-joint; the left leg was crushed and torn off in its middle third; and the right hand and lower part of the right forearm were completely crushed. At the time of his admission there was little bleeding from the injured parts, although it was stated that he had lost a large amount of blood before he was brought to the hospital. He exhibited marked symptoms of shock, his surface being cold and his temperature being a little over 96° F. Esmarch's elastic straps were wrapped around the lacerated tissues of the limbs to control any bleeding which was present, and the patient was placed upon the operating-table and surrounded by hot-water cans and covered with blankets; his clothing was only removed so far as to expose freely the injured parts. He was given one thirtieth of a grain of strychnin hypodermatically, and this dose was repeated in half an hour. When I saw him for Prof. Ashhurst, into whose service he came, about an hour after his admission to the hospital, I found that he was reacting from the shock, his temperature was 98° F., and although his pulse was rapid it had some volume. Dr. Girvin, the resident surgeon in charge of the patient, stated that his condition had markedly improved since his admission. Under the circumstances I considered that an attempt to remove the crushed limbs was justifiable. The patient was again given one-thirtieth of a grain of strychnin hypodermatically and carefully etherized, and Esmarch straps were applied to each of the injured limbs some distance above the proposed points of amputation. The right limb was first prepared for operation by washing with soap and water and bichlorid solution, and I amputated this limb just above the knee, making antero-posterior flaps; the vessels were secured by ligatures. While the first limb was being removed the other limbs were prepared for operation by my assistants, so that little time was lost, and I amputated next the left leg a short distance below the knee-joint, making lateral flaps, and the right forearm in its middle third. Having secured the vessels, the stumps were closed and dressed with a bichlorid-gauze dressing.

The patient lost very little blood during the operation, and his condition after its completion seemed to me to be almost as good as before it was begun.

[1] Read before the College of Physicians, February 7, 1894.

He was given strychnin, one-thirtieth of a grain, several times during the operation, receiving in all from the time of his admission five injections hypodermatically of one-thirtieth of a grain each. The time consumed in amputating the limbs and dressing the stumps was about an hour and twenty minutes. The patient was placed on his bed after the operation and was kept surrounded with hot-water cans for twelve hours, was given liquid diet and about four ounces of whiskey in twenty-four hours, and five grains of ammonium carbonate every two hours. His recovery was uninterrupted, and I have the pleasure of showing him to you this evening with his stumps perfectly healed.

A few cases of successful simultaneous triple amputations have been reported by Prof. Ashhurst, and Drs. Jackson, Wallace, Lowman, and others, but the majority of patients that have suffered from injuries requiring this procedure perish promptly from hemorrhage and shock, or are in such a condition when they come under the surgeon's care that no operative treatment can be instituted. Although the mortality following multiple amputations is high, there is no reason why recoveries should not be more numerous under modern methods of wound-treatment if the element of shock could be eliminated. When, however, a case comes under the care of the surgeon, and the condition is such that it seems justifiable to amputate a number of limbs at the same time, I think there are certain details which should be carefully carried out.

In the first place, such cases usually present a condition of marked shock; this is to be overcome by the application of external heat, and by the use of strychnin hypo-

dermatically, the value of this drug as a heat-stimulant in such cases being unquestionable. Stimulants administered by the mouth are usually vomited promptly, and have little effect. Strong black coffee, as hot as the patient can comfortably swallow, is often retained, and in my experience is one of the most useful stimulants that can be taken by the mouth.

The practice of stripping the patient immediately and putting clean clothing upon him, by which means his surface is exposed and chilled, is to be condemned. If the clothing is dry I do not have it removed, but cut away such portions as are necessary to get a free exposure of the injured parts, and often allow the clothing which he wears at the time of the accident to remain upon him until he has thoroughly reacted, often for some days after the operation. As regards the method of amputating, some surgeons consider it advisable to have the limbs amputated at the same time by different operators, so that the patient need be under the influence of the anesthetic for the shortest possible time.

I fail to see the advantage of this method of procedure, for it seems to me that the shock of the operations when thus done synchronously must be greater than when the parts are removed one at a time, as was done in the case I have shown.

I make it a rule to amputate first the limb which has received the greatest injury, and whose removal would most likely be accompanied by the most shock, and, if the patient's condition is not markedly affected by its removal, I then operate upon the second or third, as the case may be. If, however, I find that the patient's condition becomes decidedly worse after the first limb has been removed, and that he would not possibly survive the removal of the other member or members at the same time, I desist from further operative interference, and wrap the other injured parts in an antiseptic gauze dressing and wait until he reacts, which may be in twelve or twenty-four hours; and when reaction has been established, I undertake the further amputation or amputations that may be required. I can possibly illustrate this better by reporting a case in which I adopted this procedure. During my service at the Presbyterian Hospital, in the summer of 1892, there was admitted a switchman who had been thrown from the top of a car and run over, sustaining a crush of both legs below the knee, and an extensive compound comminuted fracture of the shaft of the left femur. As the patient had reacted when I saw him, I amputated his left leg and removed a number of large fragments from the fractured femur, and drained and closed the wounds. Upon examining the patient, before operating upon the other leg, I found that his condition was so unfavorable that I did not think he would survive the removal of the second limb; his temperature, which had been nearly normal before the removal of the first limb, had fallen to 96° F., his pulse was very feeble, and his skin was covered with a cold sweat. I therefore had the other injured limb wrapped in towels which had been wrung out in bichlorid solution, and the patient was treated actively to bring about reaction from the shock. He reacted fully, and when I saw him about eight hours afterward his temperature was 99° F., his skin was dry, and he had a good pulse. He was then etherized and I amputated the second limb, and he made an uneventful recovery.

PUERPERAL FEVER, COMPLICATED WITH EMBOLIC PNEUMONIA AND PHLEGMASIA DOLENS; RECOVERY.

By W. D. JONES, M.D.,
OF RISING CITY, NEB.

Mrs. R., twenty-four years old, a woman of good general health and the mother of two children, fell in labor on November 13, 1893, giving birth to a nine-pound boy in about three hours from the initiatory pains. Labor was normal in every respect. The placenta was delivered without difficulty in thirty minutes from the birth of the child. The uterus contracted well, and was found firm twelve hours after delivery.

At the last visit the patient expressed herself as feeling as well and strong as though nothing unusual had occurred. The lochia were normal in amount and inoffensive in character.

I left the patient, feeling assured that she would have a speedy and uneventful convalescence, as the usual antiseptic precautions had been observed.

I was hastily summoned on November 19th, and found the patient with a temperature of 106° F., the pulse 130. There was marked tenderness over and about the uterus, together with decided abdominal distention and the history of a chill during the previous night.

I gave an intra-uterine irrigation of 1 : 3000 bichlorid solution and left directions for a brisk saline cathartic, and 1 : 3000 bichlorid vaginal injection to be repeated every four hours, with an ice-bag kept over the hypogastrium. The temperature rapidly declined to 102° F., but this fall was succeeded by a chill and a rapid rise to 107°. Intra-uterine bichlorid douches were now given every twelve hours, followed immediately by one of a pint of hydrogen dioxid.

This course of treatment, together with supporting measures, was continued with fluctuations of temperature between 100° and 104° F. until November 27th, when the temperature fell to normal and so remained for twenty-four hours. A chill again occurred, and was followed by a sudden rise of temperature to 103°, with violent pain over the anterior portion of the base of the right lung. This last was only controlled by morphin hypodermatically. Marked dulness over a well-defined area involving about one-fourth of the anterior half of the base of this lung was readily elicited.

The lochia at this time being normal in quantity and character, with an absence of tenderness and distention of the abdomen, and the sudden rise of temperature, with the marked pulmonary symptoms, embolic pneumonia was diagnosticated. The chest was well strapped and morphin given as indicated and supporting treatment continued. The temperature fluctuated between 102° in the morning and 103° in the evening, until the evening of the sixth day of the pulmonary infection, when there occurred a sudden gush of stinking, bloody pus into the bronchi, which for a time nearly suffocated the patient. This was expectorated into a can and must have amounted to between one and two ounces. The temperature suddenly went down to 101.5°.

Under supporting measures and dram-doses, *ter in die*, of syrup of hydriodic acid, with inhalations of chlorin-gas morning and evening, after the method of Drs. Shurley and Gibbes, the quantity and offensive

character of the expectoration gradually decreased to *nil*, with a corresponding disappearance of the dulness and a decline of the temperature to normal by December 14th, when phlegmasia dolens presented itself in the usual manner and claimed attention. This latter trouble was fortunately mild and of short duration; and now, over two months from the initiation of her serious and complicated illness, the woman is practically well.

HOSPITAL NOTE.

A CASE OF PURPURA RHEUMATICA, WITH EDEMA OF THE GENITALIA, IN A MULATTO CHILD.

Polyclinic Hospital, Philadelphia.

SERVICE OF SOLOMON SOLIS-COHEN, M.D.

[From notes taken by THEODORE A. ERCK, M D., formerly Resident Physician.]

W. G., a mulatto, four years old, was admitted to the Polyclinic Hospital, August 24, 1893. It was learned that the child had been abandoned when he was about ten months old. The foster-parents stated that he had always been healthy until two weeks before admission, when his feet, arms, penis, and scrotum, and one of his eyelids, began to swell and became very tender to the touch; they also noticed dark-red spots upon the abdomen below the umbilicus. Upon admission the child presented purpuric spots upon the abdomen, the genitalia, and all four extremities. There was no eruption upon the face, neck, chest, or back. The joints were all sensitive, and the feet, ankles, hands, and wrists swollen. The purpuric spots were especially numerous in the flexures of the knees and elbows. There was marked edema of the prepuce. It was not deemed advisable to puncture in order to determine if the effusion contained blood. The temperature was 101° F., the pulse 104. The urine was clear, reddish-yellow in color, of acid reaction, with a specific gravity of 1024; it contained neither albumin nor sugar. It deposited a slight flocculent precipitate, and upon microscopic examination granular urates were found, and after twenty-four hours spiculated spheres of ammonium urate. There was no evidence of syphilis. Milk-diet was ordered and the following prescription written:

℞.—Sodii salicylatis . . . . ℥ij.
Tinct. ferri chlorid. . . . f℥ij.
Glycerin. . . . . f℥j.
Acid. citric. . . . . gr. x.
Liq. ammon. citrat. . q. s. ad f℥iv.—M.
Sig.—f℥j, in water, every third hour.

The bowels were kept slightly loose with Rochelle salts. On the third day after admission the swelling of the joints was markedly reduced, and they were also much less sensitive to pressure, though motion was exquisitely painful. On the outer side of the left knee and upon the inner side of the left thigh, irregular-shaped blebs, filled with dark, bloody serum had formed. The purpuric spots on the rest of the body had distinctly faded. The joints were wrapped in lint soaked in a solution of tincture of opium, sodium bicarbonate, glycerin, and water. On the fifth day the swelling had entirely disappeared and the spots were hardly visible. The blebs had begun to heal after a process of ulceration. An examination of the eyes, made by Dr. Risley, showed the eye-ground to be rather paler than is usual in colored children and the lymphatics somewhat distended; but there were no spots; there was a high degree of hyperopic astigmatism in the right eye. The child was discharged on the fourteenth day, entirely well.

BACTERIOLOGIC NOTE.

DETAILED DIRECTIONS FOR A SIMPLIFIED METHOD OF PREPARING LOEFFLER'S BLOOD-SERUM MEDIUM FOR DIPHTHERIA-CULTURES.

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THE importance of the culture-test in the diagnosis of diphtheria is widely recognized in recent medical literature, and every conscientious physician feels the necessity of applying this test in practice. The subject has been well presented by Councilman[1] and by Parke,[2] and the reader is referred to these papers for practical details in the clinical application of the culture-test. Unfortunately, however, unfamiliarity with the technique of this method handicaps the practitioner; and, as he is often situated out of reach of laboratory assistance, he is compelled to neglect the valuable aid in the diagnosis of throat-affections which the culture-test affords. This objection likewise applies to an ever-increasing multitude of other laboratory methods in clinical diagnosis, and in his capacity of laboratory teacher, the writer feels the great importance of *detailed instruction in technique*. The hope of meeting this demand in relation to the diagnosis of diphtheria is the motive for submitting the following directions.

The actual knowledge of bacteriologic manipulation demanded in the application of this test may be readily acquired. The appliances necessary for this, as for all ordinary bacteriologic studies, are readily procured.[3]

Granting that the physician has mastered the elementary details of bacteriologic technique, the special application of the diphtheria culture-test still presents one considerable difficulty—that is, in the preparation of the special blood-serum mixture of Loeffler.

Councilman (*loc. cit.*, p. 550) has called attention to a simple process by which the difficulty in the preparation of Loeffler's medium is much reduced. This process consists in the immediate coagulation of the serum-mixture in a steam sterilizer, and the subsequent sterilization of the solid serum by the discontinuous method, as employed in the preparation of ordinary agar and gelatin. In the details of Councilman's method, however, certain precautions are absolutely essential, and we wish to direct attention to these details, which were not, for obvious reasons, included in the contribution of Councilman. At best, the preparation of Loeffler's medium is

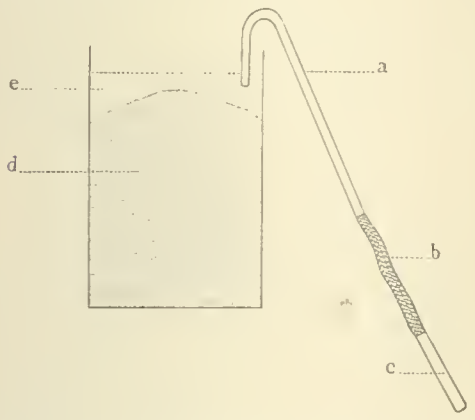
[1] "The Pathology and Diagnosis of Diphtheria," American Journal of the Medical Sciences, November, 1893, pp. 540–552.

[2] Medical Record, February 11, 1893.

[3] The simplified directions, and the descriptions of simple apparatus, in Salmonsen's Bacteriological Technology for Physicians, are extremely valuable to beginners in clinical bacteriology.

a time-consuming task, and the desirability of some more easily prepared medium is felt.[1] It is believed, however, that the following directions will enable a physician to prepare his own blood-serum mixture with a minimum amount of time and trouble.

One or two large glass jars, of a capacity of a gallon each, are sterilized by dry heat; or by washing with a 1 : 1000 sublimate solution, followed by alcohol and ether. The museum jars of Whitall, Tatum & Co. make very convenient receptacles (see Abbott, *Principles of Bacteriology*, p. 70); but any large, covered vessel of glass or metal may be employed, though glass is preferable, because it enables one to view the height of the layer of serum. After sterilization, the jars are taken to the slaughter-house and filled with freshly-shed cows' blood or calves' blood. The blood is to be caught as it spurts from a cut in the throat of the animal. After wiping the sides and edges of the jar the lid is replaced and the jar set aside and kept perfectly quiet until the blood has coagulated firmly. The jar, with its contents, is now to be carried to the laboratory with as little agitation as possible. It is set in a cool place—out of doors in winter, or in an ice-chest in summer—but the mass must not be allowed to freeze.



Diagrammatic. Illustrating the use of a simple siphon for the transfer of blood-serum and other fluids without contamination. *a b c*, the siphon; consisting of the angular glass tube *a*, the rubber tube *b*, and the short glass tube (mouth-piece) *c*. *d*, the coagulum. *e*, the layer of serum.

At the end of twenty-four hours a layer of serum will be seen on the top of the coagulum. This first layer of serum is usually about an inch in depth, and more or less clear and straw-colored. This serum is to be transferred to a flask of sufficient capacity. The most expeditious method of effecting this transfer is by the aid of a siphon, which is to be made from a piece of glass tubing of appropriate length, and bent at the proper angle. The angular glass tube is to be provided with a piece of rubber tubing and a short glass "mouth-piece" on its longer arm.

The length of the angular glass tube, *a*, Fig. 1, will depend on the height of the jar. The rubber tube, *b*, and the mouth-piece, *c*, should each be about three inches in length. The siphon, consisting of the pieces *a b c*, is to be sterilized by steaming an hour or so in the steam sterilizer; or by the employment of a 1 : 1000 sublimate solution, followed by alcohol and ether. The short arm of the angular tube, *a*, is carefully lowered into the serum, where it is to be steadied by an assistant. Then, with the forefinger and thumb of one hand holding the rubber tube, *b*, at its middle, the operator sucks upon the tube, *c*, preventing the serum from flowing into his mouth by pressure upon the rubber tube. The siphon being filled with serum, the terminal tube, *c*, is removed, and the serum is allowed to flow into the previously sterilized flask. The short arm of the siphon is lowered into the serum until the escaping fluid becomes too bloody. A certain amount of blood coloring-matter in the serum does no harm, as will be pointed out; and in fact, it is almost impossible to obtain a perfectly clear serum without a second siphonage.

If the jar containing the coagulum be now set aside for another period of twenty-four hours, a fresh quantity of serum may again be obtained. In this way from 500 to 1000 c.c. of serum may be obtained from a gallon of blood. Of course, the jar of blood and the recovered serum are to be covered and kept in a cool place until sterilized.

While it is advisable to conduct the preceding operations with as much cleanliness and care as possible, it is not necessary to observe the strict precautions required in the effort to obtain *sterile* blood-serum. The sterilization by steam in the present method is sufficient to destroy the ordinary accidental organisms.

Three parts of the recovered serum are now to be mixed with one part of meat-infusion containing 1 per cent. of glucose. This mixture of blood-serum and glucose-bouillon is known as Loeffler's mixture. The meat-infusion, or bouillon, as it is more properly called, is made by macerating one-half pound of lean, finely-chopped beef in a liter of water for twenty-four hours, the mixture being kept at a low temperature. The infusion is strained through a cheese-cloth, and the fluid squeezed out of the beef. To the infusion is added 1 per cent. of beef-peptone, ½ per cent. of common salt, and 1 per cent. of glucose. The mixture is to be rendered *slightly alkaline* by the cautious addition of a strong solution of caustic soda, and then boiled for half an hour, water being added from time to time to compensate for the loss by evaporation. The glucose-bouillon is now filtered through a paper filter, allowed to cool, and then it is ready for mixture with the blood-serum. Of course, if the glucose-bouillon is prepared in advance of the serum, it must be sterilized, after filtering, by heating for twenty or thirty minutes in the steam sterilizer, on each of three successive days.

A sufficient number of test-tubes have, in the meantime, been prepared. For convenience in performing inoculations of the serum with the cotton swabs described by Councilman (*loc. cit.*, p. 550), it is desirable to employ short, wide test-tubes, in preference to long, narrow ones, as containers for the blood-serum. After being carefully

[1] Schloffer (Centrabl. f. Bakteriologie u. Parasitenkunde, 1893, Bd. xiv. No. 20) has directed attention to the value of urine-agar as a diphtheria culture-medium. If the claims of Schloffer be substantiated the matter is one of considerable importance to physicians. Mr. F. E. Wynekoop, assistant in embryology in the College of Physicians and Surgeons of Chicago, is making a series of experiments on the comparative value of urine-agar and other media for the Loeffler bacillus. We will naturally look with interest to the results of these experiments.

washed and brushed, and drained, the test-tubes are stoppered with cotton plugs (the surgeon's plain absorbent cotton is preferable), and then heated until the cotton plugs are observed to brown slightly. This dry sterilization may be done in the oven of a kitchen stove or of a gasolin-stove.

The cotton swabs employed in obtaining the material for inoculation, devised by Prudden and described by Councilman, are prepared in essentially the same manner as the sterile test-tubes. A bit of absorbent cotton is twisted on the roughened end of a piece of wire (No. 16 aluminum wire is a convenient size, and very useful on account of its resistance to oxidation), the length of which is about an inch less than the length of the test-tube that is to enclose it. The wire, armed with its swab, is to be pushed into a clean test-tube, and the test-tube stoppered with a cotton plug. A number of tubes prepared in this manner are sterilized by heating in an oven until the cotton browns.

The mixture of blood-serum and glucose-bouillon is now to be transferred to the test-tubes that have been stoppered and sterilized. At this stage it is necessary to call attention to a very essential precaution—viz., the shunning of *air bubbles* in the serum collected in the test-tubes; for, on subsequent heating, the bubbles persist until the serum begins to solidify, when they burst and leave unsightly and ruinous cavities in the medium. It is necessary, then, to transfer the serum to the tubes with as little agitation as possible, and for this purpose a long glass pipet holding about 8 c.c. is employed. The pipet is plunged into the serum in the flask and filled by gentle suction, its top is closed by the ball of the index finger, and it is then removed from the flask and carefully lowered into the open mouth of the test-tube. The pipet should be steadily lowered into the test-tube, in order to avoid smearing the site to be occupied by the stopper with serum. When the point of the pipet reaches the bottom of the tube, the column of serum is gently released, the pipet cautiously removed, and the tube again stoppered and set aside. In this way the desired number of tubes are filled. About 8 c.c. constitute the proper quantity of the mixture for the wide tubes, and 5 c.c. for the narrower ones.

We have now arrived at the most important step in the preparation of our Loeffler's medium; that is, its solidification and subsequent sterilization. It is here that the steam sterilizer finds employment, and for this method, as for all other bacteriologic manipulations demanding a steam sterilizer, the well-known Arnold steam sterilizer answers every purpose. In the following description this instrument is referred to as the sterilizer.

In the operation now at hand two conditions must be observed, viz.: that only a single layer of tubes be solidified at one time, and that too much heat be avoided. In other words, the heating necessary to effect solidification of the mixture must be uniform and not too intense. These precautions are necessary to avoid an accident which is absolutely fatal to the success of the work; that is, the *production of bubbles* in the medium, which ruin the surface, as already pointed out. We have found, for example, that if more than a single layer of tubes were exposed in the sterilizer, the bottom layer solidified first, and before the serum in the upper tubes had solidified, bubbles had appeared in the lower tubes and spoiled the contained mixture. Further, when the lid of the sterilizer was tightly closed, the heat thus generated seemed invariably to induce the formation of the troublesome bubbles in the solidifying serum. The maxims which we may deduce from these observations are: to expose only a single layer of tubes at one operation; and to solidify the mixture with the lid of the sterilizer ajar.

The surface of the solid mixture, exposed in the test-tubes, must be a slanting one; hence it is necessary to incline the tubes to the proper angle before the medium solidifies. For this purpose the operator may devise a simple basket of wire netting in whch the tubes may be laid at the proper inclination. The sterilizer should be provided with perforated tin or wire-netting shelf, which is placed in the upper portion of the steam-chamber, in order that the tubes may be readily accessible and that the jet of steam may be well diffused. The sterilizer is set on the stove (coal-stove, gasolin-stove, or gas-burner), and when the steam is freely rising in the interior the improvised wire basket containing a layer of tubes of serum is placed on the shelf. The lid of the sterilizer (not the outside "hood") is placed on the top, and so tilted and held in position that a space of a quarter or half an inch remains on one side. The heat under the sterilizer must now be controlled so that, while the steam rises freely, it does not attain a sufficient pressure to raise the temperature to a dangerous degree. From time to time the lid of the sterilizer is removed and the tubes inspected. About fifteen or twenty minutes' heating is sufficient to perfectly solidify the serum. When the mixture is perfectly solid the set of tubes is removed and another batch placed in the sterilizer; and this process is repeated until all the tubes are prepared. On each of the three following days the tubes of solid serum are to be heated for twenty or thirty minutes, in essentially the same manner as just described. However, the rule about a single layer is not quite so absolute, and if due care be exercised about the amount of heat, several layers of tubes in separate baskets may be sterilized at one sitting.

Prepared as here directed, Loeffler's blood-serum medium is an opaque substance, with a beautifully smooth and shining surface. The color of the medium depends upon the amount of blood-pigment in the serum and upon the color of the peptone. With perfectly clear serum and good white peptone,[1] the medium is of snowy whiteness, and, with its smooth, glistening surface, makes an exquisite background for all cultures of chromogenic bacteria. The diphtheria-bacillus, however, usually forms a whitish or grayish culture, and it is therefore evident that the presence of a trace of the chocolate color induced by the blood-pigment would improve the culture medium. It is to the smoothness of the surface, however, that we must look especially in our mixture; for the least trace of a colony is instantly recognized on this smooth surface. This makes clear the disastrous effects

[1] I have found difficulty in obtaining beef-peptone giving the peptone-reaction, and making a colorless aqueous solution. A company of chemists at the Union Stock-yards, Chicago, is however, now making a beautiful product, which it has placed on the market through the agency of E. H. Sargeant & Co., of Chicago.

of bubbles in the medium. A certain quantity of "water of condensation" is expressed out of the serum, and this should be allowed to remain, at least until the serum is to be inoculated, for it exerts an important function in preserving the medium.

Unless certain steps be taken the water in the tubes evaporates, and the mixture rapidly dries and shrinks until it is unfit for use. This may be largely prevented by singeing the top of the cotton plug, pushing it below the mouth of the tube, and then sealing the mouth of the tube with a piece of surgeons' gutta-percha tissue. The neck of the tube is to be slightly warmed, and a piece of gutta-percha tissue placed over the mouth, and then pressed against the warm neck until it adheres all around. The tubes, thus sealed, may be preserved in a tightly covered glass jar that contains an inch or so of water in its bottom; or in a tin pail with a tight lid, the interior of which has been coated with asphalt varnish, and that likewise contains some water at the bottom.

It must be evident that this method may be applied to other blood-serum mixtures than Loeffler's diphtheria-medium, and that, modified in this way, the manufacture of blood-serum media is robbed of much difficulty. At best, however, the preparation of Loeffler's diphtheria culture-medium is a time-consuming task, to which the busy physician will only devote himself under protest, and we will look with pleasure for the announcement of some equally efficient and more easily prepared medium.

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MEDICAL PROGRESS.

Dysmenorrhea.—In a paper recently read before the Medical Society of the State of New York, Dr. Howard A. Kelly defined dysmenorrhea as pelvic pain at the time of menstrual congestion and menstrual flow, and thus a concomitant symptom of a large variety of diseases of the uterus, tubes, and ovaries.

An analysis of 400 cases in which celiotomy had been performed for pelvic lesions showed that 289 suffered from dysmenorrhea. Of the whole number 255 had some form of obscure pelvic ailment, such as usually escapes the attention of the general practitioner—*e. g.*, pelveo-peritonitis, with adherent ovaries and tubes, tuberculous peritonitis, pyosalpinx and hydrosalpinx, tubo-ovarian abscess, salpingitis and hematoma of the ovary—and among these dysmenorrhea was present in 180 cases. In addition, there were 55 cases of retroflexion, of which 44 also suffered from dysmenorrhea. The majority of these patients applied for relief solely because of their pelvic pains, which were aggravated at the menstrual period, and many of them had been treated for months and years for dysmenorrhea. Small myomata are also the cause of this symptom. Such growths may frequently be detected by careful rectal examination in young women who have been treated for years for dysmenorrhea. A similar manifestation attends the presence of large myomata filling the pelvis. The conclusion thus seems justified that many patients who are being treated for dysmenorrhea have some minor or obscure pelvic lesion as its source.

There is another type of dysmenorrhea common to young girls in whom the menstrual habit is becoming established. This type is usually associated with a variety of dyscrasiæ, the most prominent of which is chlorosis, and does not often persist beyond the twentieth year.

There is also a dysmenorrhea of neurotic and hysteric women, whose entire nervous system is at fault, and in whom moderate pain is described as "agony." This type is especially prone to be associated with defective development of the uterus and ovaries. In the treatment of dysmenorrhea the use of morphin is justifiable under but one condition, and that is when the dysmenorrhea occurs in a patient who is being prepared for the removal of some gross pelvic lesion which is the cause of the symptom. It should be a cardinal rule never to give morphin in any case of protracted disease marked by recurring paroxysms of pain, and which does not tend toward a fatal issue. In young girls attention to hygiene, regulation of exercise and study, and above all, rest in bed are essential in the treatment. Mild sedatives, hot teas, and a full, hot hip-bath, with the administration of aloes and myrrh or asafetida to empty the lower bowel, help to accentuate the pelvic congestion and thus hasten the flow. So-called "local treatment" in young women is rarely of value, and once begun is likely to be kept up indefinitely. If the dysmenorrhea be persistent and excessive in this class of cases, a thorough examination per rectum and abdomen under anesthesia should be made without delay.

When serious pelvic lesions exist which threaten life, or are incompatible with fair health, and there is no prospect of relief from other measures, the tubes, ovaries, or uterus should unhesitatingly be removed. When dysmenorrhea persists and no local lesion is discoverable to account for it, a thorough dilatation of the cervix is often of service. Many cases are thus relieved for a time, a smaller number are permanently benefited and a few are permanently relieved. The most effective field for this operation is in those cases which are distinctly spasmodic in character. As a last resort, it is right in rare instances in which the patient is not neurotic, and occasionally even in the presence of this complication, to remove the ovaries and tubes, even though they are perfectly normal, in order to stop painful menstruation which is wrecking the patient's health.

Acute Yellow Atrophy of the Liver in a Child.—In view of the rarity of acute yellow atrophy of the liver, and more particularly in children, a case reported by Merkel (*Münchener medicinische Wochenschrift*, 1894, No. 5, p. 86) would seem worthy of record. The case was that of a boy, six years old, in whom a day or two after the eating of unripe fruit progressive icterus developed, together with anorexia, malaise, emaciation, itching of the skin, coated tongue, and constipation. The temperature was at times slightly elevated above the normal; the pulse was at first infrequent and strong, subsequently, however, increasing in frequency and losing strength. The hepatic dulness early extended below the costal margin, but later became diminished more than half. The spleen, at first not increased in size, subsequently became enlarged. Finally convulsions set in, coma developed, and death ensued. Upon post-mortem exami-

nation a fairly large thymus gland was found persistent and containing several ecchymoses. The pleural cavities contained a small quantity of icteric serous fluid. The pulmonary pleura presented numerous punctiform hemorrhages. The lungs were edematous, and the lower lobe of the left lung contained an infarct as large as a hazelnut. The margins of the leaflets of the mitral valve were nodular and thickened. The peritoneal cavity contained a small quantity of icteric serous fluid. The mesentery and the omentum presented numerous ecchymoses of various size. The liver was soft and greatly diminished in size, the spleen soft and increased in size. On histologic examination the liver was found to be in a condition of acute parenchymatous inflammation. The kidneys were in a state of cloudy swelling.

Traumatic Cyst of the Pancreas.—BROWN (*British Medical Journal*, No. 1716, p. 1106) has reported the case of a lad, seventeen years old, who was struck violently in the abdomen by the buffer of an engine. The abdomen became swollen and was tapped on the left side, seventy ounces of blood-stained fluid being removed. Six weeks later an additional sixty ounces were removed. The patient did well for eight weeks, when he fell from a horizontal bar and immediately became very ill, complaining of severe abdominal pain. The abdomen was greatly distended, tender and dull on percussion. The symptoms becoming more pronounced an incision was made in the median line below the umbilicus, about three pints of blood-stained fluid being evacuated and a drainage-tube inserted. None of the pancreatic ferments could be found in the fluid. The patient improved for a few days, but subsequently a large swelling made its appearance in the upper part of the abdomen, together with a good deal of pain and some vomiting. The abdomen was now opened close to the umbilicus, the stomach and omentum drawn up, and the wall of the cyst exposed; this was punctured with a trocar, and three pints of dark-colored, peculiar-smelling fluid withdrawn. The opening in the cyst was enlarged, the edges attached to the abdominal wall, and a drainage-tube introduced. The fluid contained the pancreatic ferments. Seven weeks later the boy was discharged, well.

Changes in the Blood of Syphilitics.—At a recent meeting of the Royal Society of Physicians of Budapest, JUSTUS (*Wiener medizinische Presse*, 1894, No. 6, p. 224) detailed the results of observations made in the course of a study of the blood of one hundred cases of syphilis. He found that when the course of the disease was uninfluenced by treatment the proportion of hemoglobin declined with the development of the symptoms, to again augment with the recession of the symptoms. When mercurial treatment was instituted the first intramuscular injection was followed by a marked decline in the proportion of hemoglobin, and this in the course of a few days by a compensatory rise. Subsequent injections were likewise followed by a decline, which varied with the intensity of the symptoms present. Finally, however, a point was reached at which the injections no longer caused a decline, but an augmentation, and this went on until the amount of hemoglobin exceeded its level at the beginning of the treatment. Corresponding changes were observed to follow the employment of mercurial inunctions. In both instances the increase in the amount of hemoglobin corresponded with the setting in of improvement. In the discussion that followed, JENDRASSIK ascribed the diminution in hemoglobin following upon the ingestion of mercury to a dilution of the blood and not to a destructive action upon the blood coloring-matter itself.

Five Cases of Pseudo-hypertrophic Paralysis in One Family.—SIMPSON (*Medical Press and Circular*, No. 2854, p. 57) has reported the occurrence of five cases of pseudo-hypertrophic paralysis in a family of ten children. The oldest child was a boy, fifteen years of age, who was well until he was ten, when, in the sequence of a severe attack of measles, he began to present stiffness and awkwardness in rising from his seat. Then a waddling gait developed, the calves were seen to enlarge, the spine to become curved, and the shoulders prominent. He gradually became weaker and was bedridden for two years. He was much emaciated and only slight movement remained in the arms. The legs were contracted and atrophied; the spine was greatly curved anteroposteriorly and laterally. The facial and lingual muscles were enlarged. The reflexes were normal, and trophic and sensory changes were not present. The second child in the family was a girl, thirteen years old, who was healthy; the third, a boy, eleven years old, who was affected with pseudo-hypertrophy; the fourth and fifth, both boys, died in childhood of bronchitis; the sixth, seventh, and eighth, all boys, respectively seven, five, and three years old, were affected with pseudo-hypertrophy; the ninth, a girl of seventeen months, was apparently well; the tenth, a boy, six months old, was well. The family history was good and free from neuroses. There was no consanguinity.

Erythromelalgia.—LEWIN and BENDA (*Deutsche medicinische Wochenschrift*, 1894, Nos. 3, 4, 5, 6) have gathered reports of some forty cases of erythromelalgia from the literature, including three personal cases, and as a result of their study have come to the conclusion that the symptom-complex is not a disease *sui generis*, but sometimes an accompaniment of diverse spinal and cerebral affections, at other times one of the manifold symptoms of a general neurosis, *e.g.*, hysteria, neurasthenia, etc.; in some instances it is to be viewed as a neuralgia or neuritis, in other instances as a reflex manifestation. The conception of erythromelalgia as a vasomotor neurosis is not adequate to explain all of the conditions. The vascular phenomena are of but subordinate importance, as compared with the neuralgic pain. As a matter of fact, they usually appear later than the pain and bear no causal relationship to this. Besides, vascular disturbance may be present, with an entire absence of pain. The clinical picture of erythromelalgia is viewed as the reverse of that presented by Raynaud's disease, which is also looked upon merely as a symptom-complex (sometimes of peripheral origin, dependent upon a neuritis; at other times of central origin, dependent upon disease of the brain or spinal cord), and not a disease *sui generis*. In some of the cases reported an inter-relation apparently existed between both of these conditions.

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THE TEACHING OF PHYSIOLOGY AND HYGIENE IN THE PUBLIC SCHOOLS.

WITHIN a few years laws have been passed in most of the States of the Union requiring the elements of physiology and hygiene, as regular branches of study, to be taught to all the pupils in schools receiving State aid. In Pennsylvania the law is very plain in the statement that the subject *must* be taught to all the pupils in the schools, and a decision issued from the Pennsylvania School Department affirmed that all pupils who were old enough to read should possess a text-book on physiology, from which they should regularly recite so long as they remained pupils in these schools. In the village and rural schools this decision has very generally been carried out until quite recently. In the city schools, and in the State normal schools, colleges, and other institutions of learning receiving State aid, practically no attention has been paid to the letter of this State law.

We desire to call the attention of physicians to the text-books on this subject now in use; to the preparation received by teachers for the work; to the time given to the subject, and, lastly, to the undesirability of physiology in the elementary schools at all.

The Pennsylvania law, making physiology a compulsory subject to be taught in the public schools, states that a portion of each chapter in the text-books shall be devoted to a discussion of the effects of alcohol and tobacco on the human body. The law in other States is very similar to that in Pennsylvania, though in some States *one-fourth* of each book must treat of alcohol and tobacco. Each chapter has one or more topics, as, for example, "The Effect of Alcohol on the Bones," "The Effect of Alcohol on the Skin;" "The Effect of Alcohol on the Muscles," on the connective tissue, cartilage, liver, spleen, lungs, heart, blood-vessels, etc., and then for tobacco there are similar topics for each tissue and organ of the body. This is due to an effort to conform to the spirit and letter of the law.

The present law practically rules out of the schools really excellent books, such as LINCOLN'S *Hygienic Physiology*, by DR. D. J. LINCOLN, the expert on school-hygiene, and late secretary of the Health Department of the American Social Science Association; *Elements of Hygiene*, by DR. EZRA HUNT, secretary of State Board of Health of New Jersey; the monographs of HUXLEY and YOUMANS, of WALKER, HUTCHINSON, and others written by educated physicians. Indeed, there is hardly a first-class elementary text-book on physiology and hygiene which to-day fully conforms to the Pennsylvania law.

A second objection to the books is that they are often very loosely and inaccurately written. The more popular the book, the more inaccurate is the rule. A few of these more striking errors are as follows: "Chloral hydrate taken in proper quantities is entirely safe, and is exceedingly pleasant in its effects." "Albumin, when once deposited by the blood, cannot be dissolved and washed away again." Other errors have been recently alluded to by DR. G. G. GROFF, in *Science*:

"One of the best of these books several times makes the positive assertion that tobacco produces carcinoma in its users. Another volume asserts that consumption may be caused by putting on spring clothing too early in the season. One also reads that cider-drinkers are peculiarly crabbed and cross; that tobacco makes old men ill-natured; that sour milk is unwholesome, cheese indigestible, *pork a meat not fit to eat*, and that bile has the properties of baking-soda. Here is a fish-story told in the words of a highly-commended book: 'The Esquimaux who live in Greenland drink one or two quarts of oil, and eat several pounds of candles every day.' But see how a story will 'grow' even in a scientific text-book. In the next number of the 'series,' written by the same author, and from the same reliable notes, doubtless, we read: 'An Esquimaux consumes about twenty pounds of blubber fat daily, besides drinking several quarts of

train oil.' What it will be in the next volume, who can tell?

"As to the style and accuracy of these 'scientific' treatises, the following may be taken as samples: 'The eyeball is a bag (!) almost round, thick, and dull everywhere but in front, where it has a transparent covering called the cornea, meaning a horn. This is fitted into the eye just as a watch-crystal is fitted into a watch. The back chamber' (of the eye) 'also holds a jelly-like fluid, called the 'glassy humor,' which allows the iris-curtain to float and move freely."

In another book it is affirmed that cattle exhaust the lime from old pastures, and become diseased, unless the farmer limes the field—a most silly assertion.

It is of such matter that the more popular of these books is composed.

A third objection to the books is that, in the main, they are treatises on anatomy, with some physiology, and a very little hygiene thrown in. Now, children should be instructed in the elements of personal hygiene, but of anatomy and physiology the less they know the better, because the knowledge will be so imperfect that they will be better off without it. A well-known series of books, for children from eight to twelve years of age, is more difficult to comprehend than would be the anatomies of GRAY and LEIDY. They are simply compends of anatomy, with all the scientific terms retained; things utterly useless to children of the age named.

A fourth objection is that these books claim to give reliable statements in reference to alcohol and tobacco. On this point we again quote from the article in *Science:*

"Many of them contain a statement, printed in a prominent manner in the first portion of the book, that they contain '*a full and fair treatment of the nature and effects of alcoholic drinks and other narcotics in connection with relative physiology and hygiene.*' When the books are examined, however, the 'full and fair treatment' dwindles into statements, true and imaginary, of the evil effects of alcohol on the body. There is no effort at all made to discuss the different effects of large and small doses, of the effects on a full and on an empty stomach; of individual idiosyncrasies, and not a word of the beneficial effects of alcohol and narcotics when properly used. There can be no doubt but this unfair, unscientific, and untruthful manner of presenting this subject is having an effect, exactly the reverse to that which is intended. Children will soon find out that they have been deceived, and the result will be worse than if nothing had been said at all on the subject."

The law requires the effects of narcotics and stimulants on the human body to be taught; it does not require imaginary effects; it does not require one-sided statements; it does not require untruths to be taught. They are a poor sort of temperance-lessons and have the faults of the average temperance-lectures, *i. e.*, exaggeration. This is illustrated by the following passage taken from a popular book:

"It happened that about this time one of these chemists succeeded in distilling some alcohol from a fermented liquid. He tasted it, and at once noticed its power to excite the body and make him forget care and trouble. He felt young again, and was now sure he was the possessor of the long-sought-for 'elixir.' He advised his friends to drink freely of the newly-discovered liquid, telling them it would bring back to them their youth and strength. But, as might be expected, after a wild career of drunkenness he died in a drunken stupor."

Who was this discoverer, and where is to be found the account of his life?

In most of the States it has been apparent that legislators have thought that physiology could be taught without any preparation on the part of teachers, for the laws have been passed, and teachers are required *at once* to teach the subject. No time has been given for preparation. Up to the passage of the laws teachers had not been prepared in this subject, and even to-day probably not more than three or four of the normal schools in Pennsylvania are attempting to give any adequate preparation to their students in this branch. What is true of normal schools is also true of high schools and colleges. One term of thirteen weeks is the usual time allotted to the elements of anatomy, physiology, and hygiene. Any physician well knows how much can be acquired in that time, certainly not enough to teach the subject. It is also to be borne in mind that teachers have had no training in chemistry, and yet, in large part, physiology is a department of chemistry. How can any person ignorant of chemistry teach the effects of alcohol and tobacco on the body? It is sheerest nonsense to attempt it. Even in our normal schools physiology is taught without any knowledge of chemistry. The least possible smattering of the subject seems to be thought all that is necessary on this subject on the part of teachers and superintendents. We were recently asked if we did not think a teacher qualified to instruct in this branch after mastering a certain very elementary primer. The question came from the superintendent of one of the leading cities in Pennsylvania. But this position is not to be wondered at when we recall the position occupied by laymen in reference to medical subjects in general. Teachers are not at present qualified to teach this branch, in the ordinary courses in colleges or normal schools. Special

preparation is required, or the subject should not be taught.

The facts in many of the elementary text-books could all be mastered by a bright child in two or three weeks. For these primers contain only about 100 to 150 pages of large type, heavily leaded. In rural, ungraded schools, from this primer, by an untrained teacher, recitations are conducted every day in the week, and every week in the school year. And for what? Certainly not to instruct the child and to make a better citizen, but rather to satisfy the whims of certain would-be reformers. That this is not exaggeration, the case of a lady teacher may be mentioned, who recently told us that for *three years* she had daily conducted recitations with the same primer and the same class of boys and girls. And this nonsense, as decided by the State Department of Schools for Pennsylvania, must continue through the grammar school and high school, or so long as the children remain in school. The children are early, and justly, disgusted with the subject.

To the question: "Should physiology be taught at all in the public schools?" we answer, positively, no, except in the high school, and then only if a competent teacher is provided. The children of the public schools are unable, without a knowledge of chemistry, to understand the teachings of physiology; nor is it desirable that they should be informed on such subjects. The ugly pictures of the interior of the human body, the skeleton, and the skinned men, showing off their distorted muscles, are sights entirely unsuited to the children in our public schools. They need none of these things, and are, indeed, injured by them.

What should be taught is *the elements of hygiene*, divested of all anatomy and physiology. Very small children can be taught how to care for their eyes, to keep the feet dry, how and what to eat, to avoid dirty and foul water; how to care for the body; the importance of cleanliness, of sleep, and all the rest—in a word the whole subject of personal hygiene can be taught to young children and comprehended by them without the least knowledge of anatomy and physiology.

The reform to be wrought is to secure text-books on elementary hygiene, and then to labor that they displace the books now in the hands of the children.

Since the foregoing was written it is reported that the present Superintendent of Public Instruction for Pennsylvania has decided that all the pupils in the public schools must study physiology.

THE PROPOSED NATIONAL BUREAU OF PUBLIC HEALTH.

The National Quarantine Committee of the New York Academy of Medicine, after a careful study of the subject and much correspondence, has materially modified the bill for a national health and quarantine system which it presented to Congress last winter, and has embodied its conclusions in "A Bill to Establish a Bureau of Public Health within the Department of the Interior of the United States," which it will now urge Congress to enact into a law.

The essential features of this bill are in many respects the same as those advocated by The Medical News in the number for December 31, 1892, p. 739. It separates the executive work of maritime quarantine from the legislative and scientific work to be done, leaving the former to the Marine-Hospital Service, and designating the latter as the special business of the National Health Bureau, which is placed under the Department of the Interior, and not under the Treasury Department. This separation appears to us to be very desirable—a single head is probably best for executive purposes—but the rules should not be made by the person who is to enforce them.

The proposed Bureau is to consist of a Commissioner of Public Health and an Advisory Council. The Commissioner is to be an expert sanitarian, appointed by the President of the United States, with the approval of the Senate, and is to receive a salary of $6000 per annum. The Advisory Council is to consist of one member from each State, to be appointed by the Governor of the State, and to be a physician of good repute and standing. The members of the Council receive no pay, except their travelling expenses and board while actually engaged in the performance of their duties, but it is probable that for all States having a State Board of Health, the salaried officer of that Board would be the member of the National Advisory Council.

The original suggestion of The Medical News was that the members of the Advisory Council should be appointed by the President of the United States, and should include, in addition to physicians and sanitarians, some representatives of the commercial interests of the country. It is probable, however, that a council composed of persons appointed by the several Governors of the States would be more truly a representative body, each member of which would have a certain amount of

influence in his own State, than would be the case if all the members were appointed by the President —but the limitation of the choice of each Governor to physicians of good repute seems a necessity in this case. It might, perhaps, also be well to require that the selection be made from members of the State Board of Health for those States which have such a Board, but this is not an important point.

The duties of the proposed Bureau of Public Health are stated to be "to collect and diffuse information upon matters affecting the public health, including statistics of sickness and mortality in the several States; the investigation by experimental and other methods of the causes and means of prevention of disease; the collection of information with regard to the prevalence of contagious and epidemic diseases, both in this and other countries; the publication of the information thus obtained in a weekly bulletin; the preparation of rules and regulations for securing the best sanitary condition of vessels from foreign ports, and for the prevention of the introduction of infectious diseases into the United States, and of their spread from one State into another, which rules, when approved by the President of the United States, shall have the force of laws; the ascertaining by a suitable system of inspection that these rules and regulations are properly carried out and enforced; the advising and informing the several departments of the government and executive and health departments of the several States on such questions as may be submitted by them to it, or whenever, in the opinion of the Bureau, such advice and information may tend to the preservation and improvement of the public health, and in general to be the agent of the general government in taking such action as will most effectually protect and promote the health of the people of the United States."

There can be no doubt in the mind of any intelligent man that the United States ought to have a Bureau of Public Health, charged with the duties indicated, and it would certainly save the nation many times its cost.

It is possible that opposition to the bill may come from the Marine-Hospital Service of the Treasury Department, at whose hands some of the provisions here contemplated have in the past been carried out. This bill provides that the Treasury Department, which means the Marine-Hospital Service, shall have charge of the carrying out of the rules and regulations pertaining to maritime quarantine made by Congress or framed by the National Bureau of Health and approved by the President. No doubt it will be objected to this, that one department should not make rules to be carried out by another, but as a matter of fact this is frequently done, and must be done—for no department of the Government is an absolutely independent autocratic power. The Post Office Department must enforce rules made by the Customs Bureau of the Treasury, the Navy must do the same, and must also at times act under the direction of the State Department. Perhaps the newest departure in the bill is the provision for inspecting the work of the quarantine officials of one department by officers of another department, but this is not without precedent, and the advantages of having such an independent inspection are manifest, while there is no more reason why it should not be done than why a State or municipal quarantine establishment should not be inspected by officers of the Marine-Hospital Service. We see nothing in the bill which is actually objectionable, while it contains much that is very desirable, and it is in full accord with the views and wishes of the physicians and sanitarians of the country. There are some, it is true, who would prefer to have a separate and independent Department of Public Health, with a Cabinet officer at its head, but it is perhaps doubtful if the time has yet come for the establishment of a department of this kind, and we believe that the New York committee has acted wisely in proposing to put the matter into the hands of a representative bureau in the Department of the Interior, which is the department to which the great majority of public health questions in this country naturally belong.

EDITORIAL COMMENTS.

Legislation for the Prevention of Blindness is needed in every State of the Union; it is simply inhuman as well as financially expensive that such laws do not to-day exist. At the last meeting of the American Medical Society a committee of the Ophthalmological Section was appointed to draft the form of such a law and put in action the machinery to secure its passage by the Legislatures of all the States. The following is the form agreed upon by the committee:

The people of the State of —— represented in Senate and Assembly, do enact as follows:

Section 1. Should one or both eyes of an infant become inflamed, or swollen, or reddened at any time within two weeks after its birth, it shall be the duty of the midwife or nurse having charge of such infant, to report in writing, within six hours, to the health-officer

or some legally qualified practitioner of the city, town, or district in which the parents of the infant reside, the fact that such inflammation, or swelling, or redness of the eyes exists.

Sec. 2. Any failure to comply with the provisions of this act shall be punished by a fine not to exceed two hundred dollars, or imprisonment not to exceed six months, or both.

Sec. 3. This act shall take effect on the —— day of ——, eighteen hundred and ninety ——.

Physicians need no argument or explanation as to the pressing need for such a law. The difficulty lies in getting legislators to devote an instant's time to the matter. In one State a correspondent averred that it would be impossible to secure the passage of such a law because there is, of course, no "blood-money" to pay the lobbyists and the "other necessary expenses."

Dr. Howe, of Buffalo, N. Y. (the chairman of the committee referred to), who has devoted much attention to this subject, calculates that the cost to the United States for support of the blind and for loss of their wages is, at a low estimate, more than sixteen million dollars a year.

In our country there are over 50,000 blind, a very large proportion of whom, as we all know, are unnecessarily blind. It only needs the passage and execution of a law such as that proposed, to at once reduce by large fractions the suffering and expense entailed by what should be legally criminal neglect and ignorance as regards the almost certain prophylaxis of this disease.

Already four States have such a law—New York, Maine, Rhode Island, and Minnesota—and Ohio is about joining the roll of honor.

In Pennsylvania, and in all other States except these four, the disgrace goes on, and year by year our neglect and indifference permit the multiplication of the blind as a result of ophthalmia neonatorum. Every medical (local or State) society should pass resolutions as to the duty devolving upon the law-makers, and see to it that a copy of the resolution and of the desired law is sent to every member of the Legislature. In England, owing to public laws and precautions, the number of blind has fallen from 1021 to the million, in 1851, to 809 per million, in 1891, with a sharp decline still in progress.

The Necessity of a Mydriatic in Prescribing Glasses is a truism denied with considerable persistence by some oculists. If the premises of those who advocate the "uselessness of the mydriatic" were admitted or admissible, then their conclusion would necessarily follow, and both the physician and the patient would, indeed, be spared considerable bother and labor. But the premises so cooly taken as axiomatic are denied by those who stick to the mydriatic.

In the first place atropin is not the only mydriatic that can be used in the majority of cases with satisfaction. The mydriasis from the use of homatropin combined with cocain passes off in about a day, and decidedly lessens the loss of time occasioned by atropin. The trouble to the physician, a profoundly but subtly powerful argument, we suspect, seems a very bad one.

Moreover, the perfect assurance that the ophthalmometer infallibly measures the astigmatism seems to careful men without a necessary basis of fact.

That a mydriatic is not necessary in persons beyond forty years of age is another axiom that is hardly ever, one might say never, true.

That there is any considerable proportion of cases of simple myopia or simple hyperopia, without complicating "astigmatism sufficient to be corrected," is another fallacy, as is also the assertion that the hyperopic eye is a normal eye, "causing no inconvenience until presbyopia is reached," and requiring no attention on the part of the oculist.

Both the theory and the practice of medicine, as well as the theory and the practice of ploughing or shoemaking, depend upon the correct perception and the truthful statement of facts; and as to the facts mentioned, as well as many other related facts, there seem to be sad differences of opinion among ophthalmologists. "The most exact of the specialties of medicine" seems to be in process of speedily becoming one of the most inexact. Either this, or, in order to spare the oculist trouble, there is a distinct reversionary or atavistic tendency toward primitive unscientific practices and types of mind. Which is it?

It should also be noted that those who so zealously advocate the "uselessness of the mydriatic," the divinity of the ophthalmometer, and the commercializing of medicine, are encouraging every quack optician in his delusion that all refraction-work belongs to him by right and alone. We shall soon see every "specialist in lenses for the eye," every jeweler and spectacle-peddler quoting physicians to prove his impertinence, and outfitted with ophthalmometers and phorometers galore.

The Children's Aid Society.—One cannot read the annual report of the Children's Aid Society of Pennsylvania without a profound sense of admiration for the noble work in which this useful Society is successfully engaged. To rescue parentless, deserted, and delinquent children from lives of degradation and to place them in the way of leading useful careers, is surely a work deserving of the warmest sympathy and encouragement and the most liberal support. The Society has doubly felt the results of the universal depression in business, in that its income has been curtailed, while the demands upon its resources have been increased, so that it began the year with a deficit. As is generally known, the work of the Society consists in placing uncared-for, or improperly cared-for, children in the homes of respectable families, at a small outlay for board, meanwhile maintaining a general supervision of the child. Six hundred and eleven (611) children were thus cared for during the last year. In addition, the Society offers its aid to mothers, married or single, for the purpose of securing suitable employment in order to provide for themselves and their offspring. The work is greatly embarrassed for want of funds, and an earnest appeal is made to those able and willing to contribute generously to a most worthy and a well-administered cause. Subscriptions may be sent to the Treasurer, Mr. Charles E. Peterson, at the office of the Society, 127 South Twelfth Street.

To the Trustees of the American Medical Association.—We respectfully call the attention of the Trustees of the American Medical Association to the letter signed "Medicus," published in the *Journal of the American Medical Association* for March 24, 1894, p. 438, and beg to inquire whether the publication of that "dignified and professional" epistle has their approval.

REVIEW.

ESSENTIALS OF PRACTICE OF MEDICINE: ARRANGED IN THE FORM OF QUESTIONS AND ANSWERS. Prepared especially for Students of Medicine. By HENRY MORRIS, M.D. With a very complete APPENDIX ON THE EXAMINATION OF THE URINE. By LAWRENCE WOLFF, M.D. Third edition, revised and enlarged by some three hundred essential Formulæ selected from the Writings of the most eminent Authorities of the Medical Profession, collected and arranged by WILLIAM M. POWELL, M.D. 8vo, pp. 374, 48, 66. Philadelphia: W. B. Saunders, 1894.

WE have on more occasions than one questioned the utility of even the best of the books of the class of that under review. What then remains to be said concerning such as may be characterized by glaring omissions and inadequacies! They are all but too likely to encourage superficial methods of study and perhaps deceive the student into a false notion of his ability.

In the book before us we find on cursory examination that the following subjects have received no consideration: Weil's disease, glanders, anthrax, actinomycosis, hydatid disease, trichiniasis, the intestinal parasites in general, arterio-capillary fibrosis, symmetrical gangrene, hysteria, tetanus, hydrophobia, akromegalia, myxedema, cretinism, syringomyelia, acute ascending paralysis, pseudo-hypertrophic paralysis, postero-lateral sclerosis, analgesic panaris, myotonia congenita. The distinction between infectious and contagious diseases is attempted, but not made. No informed persons would say to-day that an infectious disease is "not capable of being communicated from one individual to another (*e.g.*, influenza, malaria, tubercle)" (p. 19). In the consideration of the pulse (p. 21) the distinction between rapidity and frequency does not appear to be appreciated. In the section on enteric fever we look in vain for any intimation that microörganisms may play any part in the etiology. Relapsing fever is said to be dependent upon the presence of the spirocheta of Ehrenberg; although by others the organism is quite always associated with the name of Obermeier. Malaria is described (p. 47) as "a poison generated by heat and moisture . . . . most likely due to microscopic germs of either vegetable (bacillus malariæ) or animal (plasmodium malariæ) origin. The latter view has been steadily gaining ground of late." This ultra-conservatism might have been justifiable six or eight years ago, but is scarcely warrantable to-day. Erysipelas (p. 81) and diphtheria (p. 85) are each said to be due to "a special poison," while the streptococcus and the bacillus respectively seem to be entirely ignored. In connection with dysentery we fail to find any reference to the ameba coli as an etiologic factor. The bare possibility of membranous croup being of diphtheric origin receives no consideration. Pathology seems to be made easy, as in the description of a tubercle (p. 254), which "under the microscope is seen to consist of a giant-cell which contains the bacillus . . ." In the desire to be abreast of the time in connection with the etiology of tuberculosis, the fallacious statement is made that the bacillus tuberculosis is present in the breath of affected persons. The occupation-neuroses are all included in the description of writers' cramp, which strangely is stated to be "also seen in telegraph and type-writer operators" (p. 345). We think these few random references must demonstrate that any good of which this book might be capable is more than neutralized by the incalculable injury that it can accomplish.

CORRESPONDENCE.

LAMINECTOMY.

To the Editor of THE MEDICAL NEWS,

SIR: In reading an article by Dr. John B. Roberts on "Laminectomy for Spinal Fracture," published in THE MEDICAL NEWS of March 10th, I was reminded of two cases that occurred in my practice, in which this operation was done early, but with negative results. In most of the cases of injuries of this nature there seems to be a lesion of the cord and its envelops that takes place immediately and occasions permanent results. Therefore, even if an operation be performed at once, the only hope is that there may be only pressure upon the cord, and not any disturbance in its molecules. I believe, however, that if the injury has been severe enough to paralyze, its effects will be permanent and no operation will be of any avail. I append a brief history of the cases.

In August, Miss E. fell backward out of a wagon, striking upon her neck and shoulders. She complained of immediate pain in the back, with complete loss of power in the lower extremities. Examination revealed an irregularity in the line of the dorsal vertebræ. Forced extension was employed on the following day in an attempt to reduce the displacement, but without success. A day or two later the operation of laminectomy was performed at the point of displacement, and some small fragments of bone that were broken and somewhat depressed were removed. There was no further depression, as a probe was passed up and down from the point opened, proving all to be free. The patient bore the operation well, and the wound healed by first intention. There was no change in the paralysis, however, nor did any occur during her lifetime. As time went on, cystitis, large bedsores, and other usual conditions occurred, and the patient finally succumbed.

The second case was that of a man who fell into a pit some ten feet deep, and was found a few hours later with complete paralysis of the legs. A line of irregularity in the spinal column was found in the lower dorsal region. An operation was speedily performed, revealing some loose bone, which was removed. The cord was quite reddened. There was no abatement in any of the symptoms or in the general condition, and the man died in a few days from exhaustion. At the post-mortem examination the cord was found flattened, and its anterior surface changed in appearance.

In a third case, in which a heavy body fell across the back of a young man, with resulting complete paraplegia, no operation was permitted, and the case went on in the same way as the first here related, finally terminating in death by exhaustion.

While I am, with Dr. Roberts, a believer in operations, still in view of these cases I cannot see that we can offer encouragement under such conditions, even if the

operation be done early, much less if done later. In neither of my cases did the injury to the cord seem severe enough to cause such complete paralysis, showing evidently that the cord is so constituted that but slight disturbance or pressure suffices to annul its function.

Respectfully, CLINTON B. HERRICK.

TROY, N. Y.

ACETANILID IN SURGICAL PRACTICE.

To the Editor of THE MEDICAL NEWS,

SIR: I desire to add the experience of the accident ward of the Cincinnati Hospital to what you have already published concerning the use of acetanilid as a surgical dressing. Since its introduction I have used the agent in dressing fifty-one scalp-wounds and two hundred and seven other wounds and solutions of continuity. These latter include stab-wounds and pistol-wounds, amputations of fingers, lacerated wounds of the hands from falling weights and machinery, syphilitic and other ulcers, burns and incised abscesses. In a fresh wound, first thoroughly flushed with 1 to 40 carbolic acid solution, then dusted with acetanilid, and protected from desiccation by the use of protective *over* the layers of plain gauze that lie next the wound, I have never seen a drop of pus form. Foul wounds seem to me to take on a healthy action with increased promptitude, and syphilitic ulcers heal rapidly. I feel confident that I have prevented suppuration in oil-besmeared and grimy lacerated fingers, and thus avoided what I would formerly have considered inevitably necessary amputations. Not infrequently, however, when granulations form over an extensive surface, I have had to discontinue the use of acetanilid on account of the burning pain occasioned. This is slight and of short duration at first, but increases in severity and duration with subsequent dressings. The advantages gained in the early part of the treatment, however, justify the use of the drug as long as the patient can stand it. I have never seen any constitutional effects from its use. Apparently we have made a valuable acquisition in acetanilid, and with me it has superseded the use of iodoform altogether. With my present experience I would say that it is an efficient antiseptic, stimulant, non-irritating, non-toxic, odorless, clean, easy to wash from the surface of a wound and the surrounding skin, desiccant, and to a certain extent a hemostatic. In those cases in which it begins to produce pain decided advantages have already accrued from its use. Respectfully,

CHARLES H. CASTLE,
Resident Physician.

CINCINNATI, OHIO.

NEWS ITEMS.

The Association of Military Surgeons of the United States will hold its fourth annual meeting at Washington, D. C., May 1, 2, and 3, 1894. The following provisional program has been arranged: President's Address—"Abdominal Surgery on the Battle-field," by Col. Nicholas Senn, Surgeon-General Illinois N. G., Chicago, Ills. "History," by Col. Charles H. Alden, Assistant Surgeon-General U. S. A., Washington, D. C. "Litter," by Major Valery Havard, Surgeon U. S. A., Fort D. A. Russell, Wyo. "Travois," by Major John Van R. Hoff, Surgeon U. S. A., Governor's Island, N. Y. "Railway," by Col. Louis W. Read, Surgeon-General N. G. Pa., Norristown, Pa. "On Board Ship," by Albert L. Gihon, Medical Director U. S. Navy, Washington, D. C. "Ambulance," by First Lieut. Myles Standish, Surgeon Mass. V. M., Boston, Mass. "Notes on the Introduction of Tent-field Hospitals in War, showing the Advantages of Treating Military Invalids under Canvas on the Battle-field instead of Buildings Improvised for Hospitals," by Col. B. J. D. Irwin, Assistant Surgeon-General U. S. A., Chicago, Ills. "The Medical Officer at the Summer Encampments," by Lieut.-Col. Charles R. Greenleaf, Deputy Surgeon-General U. S. A., San Francisco, Cal. "Easy Methods of Carrying Out the Principles of Aseptic Surgery," by Col. Robert Reyburn, late Surgeon and Bvt. Lieut.-Col. U. S. Vols., Washington, D. C. "Equipment and Instruction of Sanitary Soldiers," by Capt. Charles F. Mason, Assistant Surgeon U. S. A., Fort Snelling, Minn. "A Field Kitchen Wagon, for Cooking Food and Sterilizing Dressings at Dressing Stations and on the March," by Capt. H. O. Perley, Assistant Surgeon U. S. A., Plattsburg Barracks, N. Y. "The Personal Equipment of the Sanitary Soldier," by First Lieut. George D. DeShon, Assistant Surgeon U. S. A., Fort D. A. Russell, Wyo. "The Action of Rattlesnake Venom upon the Bactericidal Power of the Blood-serum," by Capt. Charles B. Ewing, Assistant Surgeon U. S. A., Fort McHenry, Md. "The Relation of the National Guard Surgeon to the Medical Profession and to the Community," by Capt. T. C. Clark, Assistant Surgeon N. G. Minn., Stillwater, Minn. "Saber Wounds," by Col. R. E. Giffen, Surgeon-General N. G. Neb., Lincoln, Neb. "The Special Training of the Medical Officer, with Brief Notes of the Courses of Instruction at the Army Schools Abroad and at Home," by Col. Charles H. Alden, Assistant Surgeon-General U. S. A., Washington, D. C. "A New Sanitary Appliance in the First Line of Battle-field Assistance," by Major John Van R. Hoff, Surgeon U. S. A., Governor's Island, N. Y. "Some Notes on the Late Civil War," by Col. Richard F. Michel, Surgeon-General Ala. State Troops, Montgomery, Ala. "Destructive Effects of the Krag-Jörgensen Rifle Projectile at the Actual Ranges," by Capt. Louis A. LaGarde, Assistant Surgeon U. S. A., Denver, Col. "Camp Hospitals," by Major Lawrence C. Carr, Surgeon N. G. Ohio, Cincinnati, Ohio. "Progress of Medico-military Science in the National Guard of New Jersey," by Brig.-General John D. McGill, Surgeon-General N. G. of N. J., Jersey City, N. J. "The Remote Effects of Gunshot Wounds of the Extremities," by Lieut.-Col. C. M. Woodward, ex-Surgeon-General Mich. State Troops, Tecumseh, Mich. "Notes on the Transportation of Sick and Wounded," by Capt. J. D. Glennan, Assistant Surgeon U. S. A., Fort Sill, Oklahoma Ter. "Case of Gunshot Wound of Liver, with Remarks on Liver Wounds Antiseptically Treated," by Capt. G. E. Bushnell, Assistant Surgeon U. S. A., Fort McKinney, Wyo. "The Treatment of Gonorrhea in Military Practice," by Major G. Frank Lydston, Surgeon Ills. N. G., State and Madison Sts., Chicago, Ills. "Description of a New Litter," by Capt. Francis J. Ives, Assistant Surgeon U. S. A., Fort Sheridan, Ills.

Dr. John H. Rauch, the distinguished sanitarian and advocate of higher medical education, died on March 24th, at the age of sixty-five years. He served faithfully during the Civil War, and at one time occupied a chair in Rush Medical College and also in the College of Pharmacy of Chicago. He organized the first Board of Health of Chicago, and was at another time Superintendent of Public Health in that city. He was also one of the founders of the Illinois State Board of Health, of which he was at different times President and Secretary respectively.

George Albert Lücke, Professor of Surgery in the University of Strassburg, died suddenly on February 20th, at the age of sixty-five years. He contributed generously to medical literature. He was one of the founders of the *Deutsche Zeitschrift für Chirurgie*, and in 1879, in conjunction with Billroth, began the publication of a mammoth work on *Deutsche Chirurgie*, which was expected to appear in sixty-six parts. He was, perhaps, best known for his writings upon new-growths.

The British Medical Association will hold its sixty-second annual meeting at Bristol, July 31, August 1, 2, and 3, 1894. Dr. E. Long will be the presiding officer. An "Address in Medicine" will be delivered by T. Grainger Stewart, of Edinburgh; an "Address in Surgery," by J. Greig Smith, and an "Address in Public Medicine," by Sir Charles Cameron.

Dr. Ezekiel Hartzell, of Carlisle, died at Fayetteville, on March 24th, at the age of seventy-five years. He had been engaged in the practice of medicine for forty-five years. He was the father of Dr. Milton B. Hartzell, of this city, and of Dr. Charles Hartzell, of Fayetteville.

Eleventh International Medical Congress.—The official proceedings of the Congress will be published daily by the new Italian journal, *Il Policlinico*, copies of which will be presented to foreign representatives of exchanging journals.

The Shadow-test.—A course of lectures, demonstrations, and clinical work on Skiascopy, or the Shadow-test, will be given at the Philadelphia Polyclinic during the week commencing April 9th.

Dr. Julius Uffelmann, Professor of Hygiene in the University of Rostock, died February 17th, at the age of fifty-eight years. He made a number of valuable contributions to medical literature.

The German-American Medical Monthly is the name of a new publication emanating from St. Louis, and edited by Dr. Gustav Blech, with the assistance of Dr. Paul Baer.

Wm. P. Northrup has recently been made Adjunct Professor of Diseases of Children in the Bellevue Hospital Medical College of New York.

Dr. Francis Flint Forsyth died at Providence, R. I., on March 11th, at the age of seventy years.

Books and Pamphlets Received.

Mensuration in the Physical Diagnosis of Phthisis. By George A. Evans, M.D. Reprinted from the Brooklyn Medical Journal, 1893.

On the Microbic Origin of Chorea. Report of a Case, with Autopsy. By Charles L. Dana, A.M., M.D. Reprinted from the American Journal of the Medical Sciences, 1894.

Autobiographical Sketches and Personal Recollections. By George T. Angell. Pamphlet. Published by the "American Humane Education Society," Boston.

Saunders' Question Compends, Nos. 8 and 9. Essentials of Practice of Medicine. Arranged in the Form of Questions and Answers. Prepared Especially for Students of Medicine. By Henry Morris, M.D. With a very Complete Appendix on the Examination of Urine, by Lawrence Wolff, M.D. Third edition. Revised and enlarged by some three hundred essential Formulæ, selected from the writings of the most eminent Authorities of the Medical Profession, by William M. Powell, M.D. Philadelphia: W. B. Saunders, 1894.

Glycosuria as an Additional Symptom indicating the Neurotic Origin of Dermatitis Herpetiformis (Duhring). By James McF. Winfield, M.D. Reprinted from the Journal of Cutaneous and Genito-urinary Diseases, 1893.

Open Incision Tenotomy, with Report of a Case in which the Tendon was Sutured by the Anderson Method. By James F. E. Colgan, A.M., M.D. Reprinted from the Therapeutic Gazette, 1893.

Pharyngites Hémorrhagiques. Par le Dr. Marcel Natier. Extrait de la Revue Internationale de Rhinologie, Otologie, et Laryngologie. Paris, 1893.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland, Ninety-fifth Annual Session, held at Baltimore, Md., April, 1893. Also Semi-annual Session, held at Easton, Md., November, 1892. Baltimore: Griffin, Curley & Co., 1893.

Infleshed Toe-nail: its Radical Relief. By Benjamin E. Cotting, M.D. Boston: David Clapp & Son, 1893.

Quantitative Testing for Sugar in the Urine. By Charles W. Purdy, M.D. Pamphlet.

Movements of the Upper Eyelid associated with Lateral Movements of the Eyeball. By Harry Friedenwald, M.D. Reprinted from the Archives of Ophthalmology, 1893.

Dakota for Health-seekers. A Climatic Sketch. By D. W. Robinson, M.D. Pamphlet. Pierre: Daily Capital Co., 1893.

A New Pathology and Treatment of Nervous Catarrh. By Seth Scott Bishop, M.D. Reprinted from the Journal of the American Medical Association, 1893,

Description of a Newly Devised Sanitary Building. By W. Van der Heyden, Yokohama, Japan. Printed at the Japan Herald Office, 1893.

Horsehair in Minor Surgery. By C. O. Thompson, Ph.G., M.D. Reprinted from the Boston Medical and Surgical Journal, 1893.

The Use,of Nitroglycerin in Arterio-sclerosis. By Thomas G. Ashton, M.D. Reprinted from the Therapeutic Gazette, 1893.

How shall we make Our Homes Healthy? By Benjamin J. Portugaloff, M.D. Translated from the Russian. Pamphlet. Chicago: World's Columbian Exposition, 1893.

An Economical System of Sanitary Drainage for City and Country. By M. Nadiein, Captain of the Russian Army. Pamphlet. Chicago: World's Columbian Exposition, 1893.

The Nerve Theory of Menstruation. By Christopher Martin, M.B. Edin., F.R.C.S. Eng. Pamphlet. London: John Bale & Sons, 1893.

Pulmonary Tuberculosis, with Special Reference to its Prophylaxis, Hygienic and Climatic Treatment. By Edward O. Otis, M.D. Reprinted from the Transactions of the New Hampshare Medical Society, 1893.

Syringomyelia. By Wharton Sinkler, M.D. Reprinted from International Clinics, vol. iii, third series.

Zur Therapie der harnsaueren Diathese. Von Dr. M. Mendelsohn, in Berlin. Verlag Von J. F. Bergmann, in Wiesbaden.

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ORIGINAL ARTICLES.

TREATMENT OF ALCOHOLISM BY STRYCHNIN NITRATE HYPODERMATICALLY.[1]

BY WILLIAM B. BREED, M.D.,
OF SYRACUSE, N. Y.

I WISH to direct attention to the treatment of alcoholism, both chronic and acute, by the use of strychnin nitrate given hypodermatically.

I am aware that when a supposed specific for any disease is brought forward an involuntary smile of incredulity passes about; therefore, whatever my private opinion may be, I will avoid strong statements, relate the history of a few cases, and leave you to deduce your own conclusions.

The following cases occurred in my private practice, and the patients were influenced by no seductive surroundings of a sanitarium or hospital to exert a moral influence upon the cure. Whatever good was done was, therefore, wholly due to the drug employed.

CASE I was a saloon-keeper, thirty years of age, who had drunk heavily all his life. He came to me after a debauch in a sadly demoralized condition, saying that he was despondent all the time; he threatened to commit suicide, and about half the time did not know what he was doing. He was at the time in a semi-delirious and dazed condition, and said that he was dreaming frightful dreams night and day, had horrors all the time, a foolish feeling in his head, and no appetite. It was impossible for him to get out of bed in the morning on account of a "dead feeling" until he had taken enough whiskey to intoxicate, and he had to keep up this condition all day in order to attend to business. This had been habitual with him for years.

I began treatment by injecting nitrate of strychnin, $\frac{1}{20}$ gr., night and morning. I also gave capsicum, valerian, bromid, and sulphonal for the restlessness and nervous symptoms. The sulphonal was most efficient. On the second day I injected $\frac{1}{15}$ gr., and on the third day he said the sight of whiskey or brandy nauseated him, although he continued to drink two or three glasses of beer daily; he had taken no food for four days. On the third day of the treatment he took fish and soup, and slept well that night; he was not nervous or "shaky," but had "a foolish feeling" in his head; the gnawing at the epigastrium had disappeared; the man looked bright, his complexion was clear, his spirits good and the despondency nearly gone. On the ninth day he could get up and eat at the usual hour without difficulty, the "dead feeling" having disappeared. He was taking five drinks of beer only a day. On the twelfth day I increased the dose to $\frac{1}{12}$ gr., and the man says he could not get enough to eat. On the eighteenth day he was taking from six to eight drinks of beer daily, but could not touch strong liquor. On the twenty-sixth day the injection was increased to $\frac{1}{10}$ gr., the patient continuing to improve in appearance. His eyes were bright, clear, and steady, and he exhibited enthusiasm, courage, spirit, and an interest in life, in marked contrast to the dull, dead, listless appearance of the first day. His slovenliness had given way to cleanliness and neatness. On the thirty-third day the injection was decreased to $\frac{1}{20}$ gr., and the dose was then decreased gradually for five days, down to nothing.

At the time of writing he still takes beer moderately, but no strong liquor; he gets up mornings and attends to business all day. His appearance indicates that he tells the truth. This result may be considered good for a saloon-keeper. The treatment did not stop his drinking entirely, but it regenerated him physically and mentally, and enabled him to attend to business like other men. The time of treatment was forty days, with two treatments daily; it is now eight months and twenty-three days since treatment was begun.

CASE II.—A female, twenty-five years of age, came to me with the following history: For two years she had drunk heavily every day and all day, and all kinds of drink; she says she cannot stop without being all undone, and she sleeps poorly. She has had delirium tremens once; she is slovenly about the house and about herself, neglecting household duties and her children. She has to keep well saturated with drink to avoid misery. The woman has the same foolish and uncertain feeling in the head as described in the first case, is very nervous, without appetite, the eyes bloodshot, the actions "boozy," and the conversation maudlin.

I began with $\frac{1}{20}$ gr. t. i. d. The woman took only one drink on the second day. I gave sulphonal nightly, with good effect upon the nervous symptoms. On the fourth day the appetite was good; she was less nervous, the head better, and there was no desire for drink at all. On the fifth day the appetite was still better. She took a drink of cider the night before as an experiment, but had to vomit immediately, and was sick all night, feeling badly in the morning; she still had a distaste for drink of all kinds. On the sixth day she took two glasses of beer. The injection was not increased. The appetite was not so good. On the ninth day the woman took two drinks of beer, but it tasted bitter, and she cared nothing for it. Her appearance has changed con-

[1] Read before the Onondaga County Medical Association, January 31, 1893.

siderably, the face not being so bloated, and the eyes being bright, clear, and calm. The home is kept tidy, and she takes an interest in household affairs. On the eleventh day she had taken no beer for two days, and had a distaste for it. The appetite was very good. On the fifteenth day she still was taking no beer and had no desire for drink. On the twenty-third day she was still abstaining, and without the least effort on her part. The injection was now reduced to $\frac{1}{20}$ gr. once a day. On the thirty-second day the appetite was poor and the patient listless: the injection was increased to $\frac{1}{15}$ gr., and gradually reduced during one week to nothing. Two months after this she began drinking to spite her husband. I gave one injection of $\frac{1}{10}$ gr. Since that time, for eight months up to the present time, she has abstained, and her appearance and actions and general spirit, tidiness, and thrift in household affairs go to show that she tells the truth.

The time of treatment was forty days, with two treatments a day.

Case III was an unusually bright and highly intellectual person, forty years of age. For twenty years he had imbibed enormously and constantly of beer only, so that he was entirely unfit for any business. He had abandoned all hope, and decided to keep up drinking until it should finally kill him, and he thought this happy time would come in about one year. At the first visit he presented the usual deplorable picture of complete despair, with loss of nearly all the attributes belonging to human beings, and suffering untold agony for want of drink.

I began treatment with $\frac{1}{20}$ gr. t. i. d. On the third day the man said he had no desire for drink, and the mental agony had disappeared. He said he felt better than for two years, was beginning to feel hopeful, and "as he used to years ago when a boy." He has great exhaustion upon exertion, and his head still feels badly. I gave sulphonal, with good results. On the seventh day I increased the dose to $\frac{1}{17}$ gr., but it caused a flushing of the face and fulness of the head. I returned to $\frac{1}{20}$ gr. The patient is of an active disposition and nervous temperament, and seems to require less of the remedy. On the twenty-third day I reduced the dose to $\frac{1}{24}$ gr.; on the twenty-fourth day to $\frac{1}{30}$ gr.; on the twenty-eighth day to $\frac{1}{40}$ gr. The head-symptoms were still present. I then injected $\frac{1}{17}$ gr., thinking that the bad feeling in the head might be due to a too rapid decrease in the dose; but it augmented the bad feeling in the head, showing that it was rather due to the withdrawal of stimulants than to diminishing the dose. Sulphonal relieved all the bad symptoms of the head and nervous system. I concluded that he had had enough strychnin, and stopped treatment. Improvement began and continued. I have seen the man at intervals during the time since dismissal, and he is working steadily and looks and feels like another man, and says that he has no desire for drink. It is now seven months since treatment was begun.

The time of treatment was twenty-eight days.

Case IV.—A male, aged forty-four, drinks some every day, and in addition has periodic debauches, mostly on beer; he requires whiskey every morning. This patient had no desire to reform, but was induced to take the treatment by his wife, who was the greater sufferer. During the treatment he was passive, and had nothing to say, except that he had no desire to drink.

I began with $\frac{1}{17}$ gr. t. i. d. After four days he was absent thirteen days, drinking during this interval. At the end of the thirteen days I resumed treatment, giving $\frac{1}{17}$ gr. twice a day. This was continued for fourteen days and was followed by a rousing spree, and he began life again as before, and is still at it, evidently liking beer better than strychnin.

Case V.—A male, aged forty-five, has periodic attacks of intemperance, lasting from one to two weeks, at intervals of from two to twelve months. He had become so irresponsible that his business had to be attended to by other members of the family.

I began with $\frac{1}{17}$ gr. t. i. d. On the third day he said that the sight of people drinking nauseated him, and that he had no desire for any kind of stimulants, nor has he the "gnawing" at the epigastrium. Before beginning treatment he said he could not eat or sleep; he now sleeps well, and cannot get enough to eat. He says he "feels like a newborn babe."

The treatment was continued for only two and a half weeks, twice a day, and the members of his family tell me that he is now always sober and attends to business. Four months have elapsed since the treatment was withheld.

Case VI.—This man had been a chronic drinker for twenty years, is helpless, and getting worse; he used to abstain at times for one week, but now he cannot do so. I injected $\frac{1}{15}$ gr. t. i. d. On the second day he had no desire for drink in the morning, but did have in the afternoon. On the third day he had no desire whatever. He said he had pressure on the top of the head, and slept poorly. Sulphonal relieved these symptoms, but not completely. The patient is hungry all the time and feels like an entirely different man. He says that his feelings "take him back to the innocent days of his childhood." I continued with $\frac{1}{15}$ gr. up to the fifth day, when the dose was reduced to $\frac{1}{17}$ gr. On the seventh day he mixed a milk-punch for a sick friend, and continued to do so every day. He said that not only did he not care to drink the punch, but that the odor nauseated him. On the thirteenth day I reduced the dose to $\frac{1}{25}$ gr., and continued to reduce it until the eighteenth day, and then diminished by $\frac{1}{120}$ gr. down to nothing on the twenty-second day.

The time of treatment was twenty-two days. Three months and eleven days have elapsed since treatment has ceased.

Case VII was a travelling agent, aged thirty-three. The peculiar characteristic of this case is that the patient had no appetite for drink whatever until he had begun to drink for some time for some other reason, such as despondency or depression on account of ill-luck or ill-health. However, whenever he begins he gradually proceeds to a prolonged debauch, drinking most immoderate quantities—as much as two quarts of whiskey in

twenty-four hours. The man has mitral insufficiency and very pronounced aortic regurgitation, which give him frequently considerable trouble. I saw him during a debauch, and began treatment immediately, giving him $\frac{1}{17}$ gr. every six hours, with an occasional drink to relieve the great agitation. After six treatments (during about thirty hours) the patient said that he had no desire for drink and that he had none of the bad feelings usual after a spree, and also, that the recovery was very much quicker. He says that his heart never behaved so well before.

Before giving any injection his pulse was fluttering and the heart was not compensating. Improvement began immediately upon giving the injections. The man said he had never taken any medicine that acted so well on his heart, and he had taken every heart-tonic known. I gave two injections a day of from $\frac{1}{25}$ gr. to $\frac{1}{12}$ gr. for three weeks. One week after stopping treatment he went on another hard spree, and the strychnin was used again, with the same good and quick result in the acute attack. This time I used $\frac{1}{10}$ gr. every four hours, and the recovery was one day more rapid than before. Upon questioning him, I learned that he had taken a drink immediately after each treatment during the three weeks, and had kept it up afterward. He says, also, that he had not a particle of desire for drink, and could as well have let it alone; but that he does not know why he took it. He evidently has no desire to abstain.

In drawing conclusions from the results obtained in these cases, we must make allowance for the fact that those that make up this class of people are notorious liars in the one respect of their habit, and their statements as to total or partial abstinence must be taken with a large grain of allowance, unless they are verified by other evidence, such as the appearance, actions, general environment, and the statements of disinterested persons, or of persons interested more in curing than in concealing. If any variation be made in the treatment, I would suggest using *larger* doses at *shorter* intervals, unless, as in one case reported, the patient be exceptionally sensitive to the drug.

It is to be noted that in every case, upon the *third day* there was a total absence of a desire for drink or *any* stimulant that might replace drink; and, a little later, a *distaste* for drink in some cases. It should also be noted that in these cases the patients were at places every day where drink could be freely had; and still the distaste continued.

Being associated with the two worst cases nearly all day, every day during treatment, I could have discovered any return to drink. The one fact of replacing the appetite of twenty years for drink by a distaste, or at least a lack of desire for drink, shows the remedy to possess a power seldom, if ever, met with in the treatment of any disease, by any remedy—a psychologic power lying wholly within the drug and independent of moral influences.

Since writing these notes an article has appeared in The Medical News (January 28, 1893, p. 90), by H. E. Schmid, upon "Alcoholism," and emphasized later by another article, by J. J. Brownson (Medical News, February 11, 1893) in which he attributes the success of the Keeley cure largely to the moral influence of the surroundings, association of patients, forms, ceremonies, and statements made with a view to frighten the patient, and placing before him the promise of death if alcohol comes in contact with the drug with which he is saturated, upon leaving the institution. I do not credit this statement, and I think we have reason to believe that Keeley has in use a drug similar to, if not identical with, the nitrate of strychnin.

I may mention, by the way, that Mr. Keeley in his circular mentions the complete change that occurs on the third day, as in the foregoing cases.

Upon reviewing the results in these few cases, I think we may fairly conclude:

1. That we have in this drug a remedy that actually, for a period as yet undetermined, removes the desire for alcoholic stimulation in the chronic inebriate, and that *without the least effort on his part.*

2. A remedy that removes the distress and gnawing at the epigastrium, so common upon the withdrawal of alcohol.

3. A remedy that tones up the nervous system, allays the insomnia, the flighty and other bad feelings in the head, the mental disturbances, and the tremulous agitation and uncertainty of voluntary motions due to the withdrawal of stimulants.

4. A remedy that brings back the appetite and general physical vigor of the body.

5. A remedy that temporarily transforms a wholly demoralized creature into a man.

6. A remedy that is of great value in acute attacks of alcoholism.

7. Incidentally, a remedy that is an exceedingly good and safe heart-tonic.

8. More than all, a remedy that exerts a moral influence upon the patient, giving him what he had before wholly lost, to wit: Hope, enthusiasm, self-confidence, and courage, where before was despondency, abandonment, and despair; a steady, straightforward gaze, and a bright youthful expression of the eye, which replaces the shamefaced, sneaking, apologetic air of total depravity of the chronic inebriate.

9. We have in the nitrate of strychnin *not* a remedy that will oblige a man to abstain from drink if he does not want to do so, and such subjects do not deserve one. From the results obtained by the gold cure, the silver-ash cure, the Keeley cure, etc., we may conclude that we have a remedy that is as efficient as any of these, and much safer—a remedy,

moreover, that is not secret and can be used by men who know the action of drugs and can use them with discretion and safety to the patient.

There is no reason why the public, which places its life in our hands daily, should be obliged to offer up sacrifices upon the shrine of quackery, when men can be treated privately, safely, and efficiently by any family physician, and thus avoid publicity, danger, and expense.

Perhaps we have not a specific; probably not, but we are as near to it as the quacks are; and if such cases of doubtful, if not suspicious, death as the one which occurred here lately can be avoided, it is right that the public should, through us, know it and profit by it.

From a scientific standpoint, these few cases afford but scanty statistics from which to draw conclusions. But if, from a humane standpoint, as much good can be done in all cases as in these few, we have done much to better the condition of our fellow-man.

NOTE.—Since writing the foregoing, there has appeared in THE MEDICAL NEWS an article by C. F. Chapman, taken from the *Chicago Medical Recorder*, February, 1893, in which the basis of the Keeley remedies is said to be nitrate of strychnin.

THE EFFECT OF ATHLETICS IN THE PHILADELPHIA PREPARATORY SCHOOLS AS TO MENTAL AND MORAL CHARACTER.[1]

BY A. H. P. LEUF, M.D.,
OF PHILADELPHIA.

IN the consideration of any subject it is well to guard against misunderstanding by defining the meaning we place upon leading terms used in its discussion. It is therefore highly necessary that we should be agreed as to what we mean by athletics and by mental and moral character. I will give my definition of these terms, and ask you to accept them for the time, it being understood that my conclusions are based on the premises given.

The term athletics, in this paper, shall be considered as signifying competition in physical prowess. The term mental character I shall use synonymously with mental growth, and it will mean the evolution of mind from the simpler toward the more complex or most complex operations of the mind. The term moral character I shall use synonymously with moral growth and morality, and it will mean the degree of tendency toward the harmonious blending of egoism and altruism that leads toward absolute equitableness.

The terms of the problem tendered me for solution are absolute, whereas they can in reality be only relative. The question would better have been: "Do athletics, as they at present *seem to be* conducted in our preparatory schools, conduce to mental and moral character?" It is in this form that I shall attempt a careful reply.

Through the courtesy of your Secretary, who furnished me with a list of the head-masters of thirty preparatory schools, I was enabled to communicate directly with those presumably most interested in the subject of this paper. A request was sent to all to forward to me an outline of the system of physical education prevailing at their respective schools.

Judging from what I have seen in several of our best preparatory schools, and from the information received directly in answer to my letters of inquiry, I should say that our preparatory schools now generally adopt some kind of physical exercise as a part of their weekly curriculum. In some it is systematically and compulsorily pursued between study hours as a part of the regular recitative work; in others it is purely recreative and voluntary during recess or after school in a gymnasium, or upon more or less suitable grounds provided for the purpose. The exercises, whether voluntary or not, are usually under the care of an instructor. In a number of the schools a specially qualified physician has been engaged to examine the scholars twice or thrice during the school session for the purpose of prescribing the most desirable special exercises and noting the results.

It has become the custom in even some of the preparatory schools to have a series of competitive athletic contests yearly between a number of schools forming a so-called "league." These contests embrace track and field sports, base-ball and foot-ball. That this is undesirable should be self-evident to any unbiased observer conversant with the strain entailed by the amount of physical work in a given time in children. When it is considered that the so-called training, generally a glaring misnomer, is taken in hand solely by those who desire to take part in the contests, and that their "training" consists in doing their utmost until compelled to stop from sheer exhaustion; and when it is also taken into account that the bodies of children are only in a developmental state, and likely to suffer serious and permanent damage from overwork, *i. e.*, strain, it is at once evident that there is a large element of risk attached to the encouragement of these competitive exertions. This matter has been more fully considered by me in a paper read before the American Medical Association, at Newport, R. I., on June 5, 1889.[1] You will see from that

[1] Read by request before the Convention of Teachers in Philadelphia.

[1] See the Journal of the American Medical Association, April 5, 1890, p. 493, and the Archives of Pediatrics, September, 1889.

how important it is to carefully superintend the physical exercise of children.

The advantages of careful physical education are best summarized in another of my former papers, quoted in the one just mentioned, and reproduced here:

"1. The object is to develop the material body, and, with it, of necessity, the mind and morals.

"2. Like most potent agencies, it is much abused and far too little understood.

"3. It absolutely forbids smoking.

"4. It absolutely forbids the drinking of alcoholic or malt beverages.

"5. It insists upon the necessity of regularity in living, especially as regards time of sleeping, eating, exercise, and recreation.

"6. It enforces a good substantial dietary that will never be forgotten.

"7. It discountenances all kinds of vice.

"8. It is rigid in discipline without seeming so to those disciplined, and develops implicit and willing obedience to advisers.

"9. It has a marked effect upon the growth of the body and mind.

"10. It develops to a high degree the valuable qualities of hope, confidence, courage, deference, obedience where proper, independence, perseverance, ambition, temperance, and determination.

"11. It is, in short, the most valuable preparation of the young for the cares and trials of adult life, and aids young and old alike to ward off disease and mitigate its effects."

I am pleased to report to you that the head-masters who have kindly replied to my queries have generally a correct idea as to what should be done in the physical education of their charges. But soon one is confronted with the "fad," or fashion of the day, variously subscribed to by parents and guardians, each insisting upon his or her own way, until, between the multiplicity of expressed injunctions by them, the opinions of the master or principal, and the question of cost and profit, the heads of schools must become bewildered as to the best course to follow, when all things are considered. The result generally is a compromise, consisting of the best that can be offered for the small additional compensation contributed by the parents. It is a deplorable fact that even wealthy people are prone to begrudge a fair monetary contribution toward the physical care of their children. The inevitable consequence is that physical education in our preparatory schools is not what it should be, and what the head-masters would like it to be.

I have heard of preparatory schools adopting a gymnasium course simply as a business shift to meet a demand. Even that is a healthy sign, though we expect an educational establishment, however modest, to lead the public instead of being led. But though a course in physical exercise is established on what may be called purely "business principles," the cost is considerable and the apparatus and space to place them in are expensive. This purely business reason may be called an illegitimate one. The legitimate reason for establishing physical education in preparatory schools is because it is an educational necessity. It divides itself into the development of the body and of the mind, and incidentally of character, or moral character, if you please.

That proper physical exercise develops the body is so self-evident that it needs no special consideration. It favorably affects every structure and function of the body by increasing its activity and nutrition. And from this simple statement it follows, of necessity, that the activity of the brain is increased by directing the various complex muscular movements for different periods, thus necessitating and causing an increased flow of blood through the cerebral bloodvessels, and a consequent better nutrition of the organ of the mind itself. Cerebral localization, the outcome of the older and extravagant phrenology, has shown that the many faculties of the mind are more or less distinctly mental functions having their seat in rather well-defined parts of the brain. Now, those faculties which are specially exercised upon the playground or in the gymnasium are not the same as those which are brought into play in the study-room, though there are many general faculties, as I may call them, which are used in both instances. Extended memory and computation may be instanced as being special to the latter requirements, and coördination of muscular movement to the former. Energy and perseverance are qualities of mind that are general and common to both.

There are two kinds of facts that I wish to point out as natural corollaries to the foregoing statement. One is, that while a part of the mind is exercised in physical exertion another part is at rest that is exercised during mental exertion in the school-room, and *vice versa*. By a judicious combination of the two there follows that alternating rest and activity that is so conducive to growth and development, comparable to the beneficent diurnal waking and sleeping. The other fact that I wish to bring out is that such qualities as energy and perseverance, that are in constant use during either physical or mental activity, are likely to be overused if the mind and body are kept constantly at work, though alternating. When these common qualities of mind are not too much used there is general beneficence, but when they are overtaxed by excessive use of either body or mind there is general disaster, greater or less, depending upon the amount of overtaxation and the period required for recovery.

At no time of life is it possible for anyone to do his utmost in physical work, be the period long or short, without sacrificing ability to do the best mental work during that time and for varying periods thereafter. It has, of course, been demonstrated upon numerous occasions that college athletes, endowed with superior physical power and nervous energy, have excelled both in athletics and in their studies. I have met with several of these after they had left college. Some of them came to me as patients. The result was the same in all. They had earned a national, or even international, reputation as athletes, had been leaders of their graduating classes in college, but had so sapped their nervous or vital energies in the three or four years' excessive strain, that they had not enough left to ward off the common ailments against which they at one time so confidently considered themselves proof; they had lost their ambition, and they were sick and could not get well: they were getting worse. What was the trouble? They had the great American disease called neurasthenia or nervous exhaustion. Their prospects were not very roseate. Almost their only chance of recovery was several years of comparative ease and change of life. This was utterly impossible except to one. Thus end the brilliant prospects of the renowned college athlete!

The objection to athletics, as I have defined the word, is that they are competitive, that the competition grows, that it breeds a spirit of professionalism, a desire at all hazards and at any price to achieve a victory. Present comforts, future health, studies, and mental development are cast to the winds in the one idea—rush for glory. Too many parents unwisely encourage this fetich-worship, frequently at a dire cost. This competitive spirit saps the energies and leaves little for study. The strain can only be borne by the few, and there soon results such a high standard of excellence that only the best endowed naturally attempt the exercises, and the great many sit idly by and watch the competition, and these in their turn sap their energies with a useless excitement accompanied by no equivalent gain in physical development.

The ideal physical education, viewed from a pedagogic standpoint, is to combine physical and mental exercise so as to entail no strain upon the nervous energy, perseverance, and moral character. To accomplish this result there should be eliminated from physical exercise all undue or excessive excitement. In other words, physical exercise, of whatever kind, to be conducive to the best welfare of the individual, should be recreative rather than competitive, a pleasure rather than an unwelcome duty, a healthy desire that knows satiation within safe limits rather than an unreasonable ardor that knows no safe bounds.

I have found certain *a priori* conclusions of mine verified in my experience at the University of Pennsylvania, where it was the constant experience that the classes did their poorest work in the recitation hours immediately succeeding exercise in the gymnasium. Men in training are likely to neglect their studies unless they have sufficient incentive to regard the warnings of Nature. I shall eagerly await the discussion of this paper to learn from some of the learned head-masters here this evening about the standing of their scholars while in training for a contest.[1]

There can be no doubt that the increased circulation of blood through the body caused by proper physical exercise, especially that which is taught in the schools, results in increased nourishment of the brain, and with it increased mental character. Moreover, the varied and complex acts constituting athletic work cause a decided improvement in the rapidity of the perceptions, judgment, and execution.

The moral improvement is just as decided. The rules governing all games are arranged with the object of excluding anything unfair. Physical education, especially when combined with games, is a moral educator of great force, particularly because its results are natural and spontaneous. The increased manliness and fairness shown by boys after playing games for a few weeks is readily seen by all who watch them. In professional base-ball the finger of suspicion cannot justly be pointed at a single member of the profession. The claim that any of the games of the larger leagues are not honestly and earnestly contested would be declared absurd by the well-informed patrons of the national game.

I desire to say that I know of no moral educator so spontaneous as proper physical education. Its precepts must be followed if disagreeable results are to be avoided. Its active votaries are ever overcoming obstacles that at first seem insurmountable. They learn to go at something hard to do with a confidence that becomes habitual, and serves many a valuable turn in after-life in the battles against the world. That this moral effect is to be observed among all the school-children that take to games and exercises in the right way has probably been observed by all present. That there are brutish natures that prove exceptions does not, of course, invalidate this statement.

My conclusions from a study of the facts are that every preparatory school should discourage competitive athletics, though I should deem it a mistake

[1] All who spoke upon the subject agreed that training for contests caused a falling off in the scholarship-standing of those in training, while the same was true of nearly all, though to a lesser extent, upon the eve of an important contest.

to prohibit them, because it cannot be done if the pupils are unwilling, and it is not required if they follow the advice given.

There should be a physical examination made at least twice a year by a specially qualified physician for the purpose of prescribing necessary exercises to correct defective physical development and malnutrition of the body or of any of its parts. An experienced instructor should be engaged to help the pupils carry out their prescribed work, as no good, and sometimes harm, results from exercises wrongly done or neglected.

Each boy should receive a graphically arranged chart, some of which I have passed around, showing his condition at the time of examination. He can occasionally measure and test himself, and note how he is improving. It is interesting, and makes him more attentive to lectures or lessons on anatomy and physiology, creating a desire for this kind of knowledge.

A gymnasium and a playground are a great desideratum, in fact are indispensable requisites, if the highest aim of pedagogics is to be achieved. If only one is obtainable, I declare in favor of a playground for use all the year round. If neither is obtainable, judicious calisthenic class exercises by the instructors, themselves properly taught, can do a great deal of good.

In reply to the query that forms the title to these remarks, I would say that—

Athletics, as at present conducted in our preparatory schools, do conduce to mental and moral character in varying proportions, depending upon whether the system in vogue approaches the requirements indicated or not; and that in all of them, as well as in our largest colleges and all intermediate educational institutions, there is opportunity for very much improvement in the plan of physical education; and that there is no method of physical education anywhere in vogue that has not serious drawbacks, some of them overbalancing the good sought to be accomplished.

2353 N. Seventeenth St

THE ETIOLOGY OF CARCINOMA.[1]

By JOSEPH McFARLAND, M.D.,
of Philadelphia;
Demonstrator of Pathological Histology in the University of Pennsylvania; Adjunct Professor of Pathology in the Philadelphia Polyclinic.

Carcinoma has baffled the medical skill of all ages. It is one of the most troublesome, yet one of the most common of diseases. Without discrimination it affects the young and the old. Moreover, it is a peculiar disease, and, on account of its terrible nature, has been studied by scientific men as far back as medical literature dates.

It is a strange thing that while medical science has advanced so rapidly in many respects, our knowledge of this disease has remained at a standstill. The physician is still appalled at its unchecked growth, the surgeon is still exasperated that his eradications are without effect, and, despite all we know or do, it pursues a steady course of painful return, extended growth, and lingering death.

For many years carcinoma and tuberculosis were not disassociated in the minds of medical men. This is one reason that the experimenters of early date frequently reported successful inoculation-experiments. It remained for Virchow, and later Koch, to differentiate between these two diseases. Subsequently carcinoma became a disease subjected to careful investigation, but, notwithstanding the many who studied it, its etiology remains profoundly obscure.

When bacteriology first became a science, carcinoma was at once attacked by a host of scientists. The discoveries of Scheuerlen, Schill, and Kubasoff remain with us to day as monuments of scientific error. It was not long after the bacteriologic failures that Malassez, Albarran, and Darier in France, and Thoma in Russia, began to investigate carcinoma with a view to finding other organisms than bacteria whose presence might cause it, being led to this by the discovery of "psorosperms," *i. e.*, coccidia-like bodies, in the cells in Paget's disease. Simple observation of these bodies found in the cells of Paget's disease and subsequently in carcinoma was not sufficient for proof, and inoculation-experiments became frequent at this time; fragments of the carcinomatous tissue were placed beneath the skin of animals, whole tumors were introduced into the abdominal cavities of animals, suspensions of the tumor-cells in the blood-serum, physiologic salt-solution, and bouillon were injected into the circulation of animals and the results carefully noted. I have been able to collect the results of almost five hundred of these experiments, with scarcely one reported successful. Klebs has probably made one hundred experiments, and has met with signal failure. Hanau has been successful three times in experimenting on rats. In all of his three experiments squamous epithelioma was brought about.

Still there is this peculiarity about the inoculation of carcinoma—that, while it is seemingly not inoculable, or only exceptionally inoculable, from one animal to another animal of the same kind, it is distinctly inoculable from one organ to another of the same animal. There are many cases reported in which epithelioma of the lower lip has invaded the upper lip, in which the mammary gland involved the

[1] Read before the Pathological Society, January 25, 1894.

arm when kept in contact with it, in which a carcinomatous uterus affected a contiguous portion of the vagina, etc. There is a case reported of a man with a burn on his arm, who was infected by squamous epithelioma of the face from which he suffered, some of the cells from the facial disease growing well upon the hand and causing the disease there. These cases cannot be correctly called cases of inoculation, but rather cases of modified metastasis. Of course, all these cases carry with them the suggestion of infectiousness in carcinoma and support the parasitic view of the disease.

Haviland has made a special research upon the miasmatic conditions relative to carcinoma, and has found that the disease seems to be more prevalent in those localities in which there is much moisture, *i. e.*, where the lands are marshy or remain inundated for a great length of time.

Dr. Ackerley speaks of a certain house situated on low ground, the cellars of which, being below the level of a small stream about twenty yards away, were pretty constantly inundated. In this house during thirteen years four cases of carcinoma are said to have occurred :

I. A lady who had occupied the house for many years died of carcinoma of the breast and, it is said, also of the womb.

II. The next occupant, a lady, lived seven years in the house, then died of carcinoma of the breast.

III. Two years later the husband of this woman died of carcinoma of the larynx.

IV. The second wife of this man has suffered amputation of the breast for carcinoma, but still lives.

These things may be coincidences, as has been pointed out, but they may mean something more. At present the literature upon this subject is immense. The whole world seems to have become satisfied that carcinoma is a specific disease and is in search of the parasite.

Those who have read of the parasites of carcinoma must have been struck with the fact that the numerous observers find very different things. One asserts that the carcinomatous organism is a protozoan of the coccidia group; another that it is a gregarine; a third that it is an ameba. One can read paper after paper bearing such eminent names as Podwyssozki, Sawtschenko, Soudakewitch, Ruffer, Walker, Metschnikoff, Delépine, Korotneff, Foà, and Virchow, all more or less at variance.

During the last two years it has been my pleasure to make a careful study of such carcinomata as came into my hands, for the purpose of ascertaining whether or not the bodies described were sufficiently characteristic to be called parasitic or not.

My experience in connection with this subject has not been very great. I have been able to get but fifty or sixty carcinomata in a more or less well preserved state. Here let me observe that too much stress has been laid upon the methods of preservation and methods of staining. Ruffer and Walker tell us that the organisms cannot be seen well except in specimens hardened in osmic acid or bichlorid of mercury; others, however, find that they show in ordinary alcohol-hardened tissues.

The same gentlemen see them best when Biondi's stain is used. Soudakewitch prefers hematoxylin and eosin. It makes little difference how one stains; if the thing is there it will be seen. However, the more careful the manipulation the better the result, and, of course, the better the tissue is preserved the more clear the final picture will be.

I have studied squamous epithelioma, cylindric epithelioma of the stomach and intestine, carcinoma of the mamma, and of the bladder and of the uterus, and have found pretty much the same parasite-like bodies in all of them.

The forms of parasites described are easily separated into (1) coccidia, (2) gregarinæ, and (3) sporozoa.

The form first described was thought to be a coccidium. A coccidium is an intra-cellular parasite characterized by the presence of a distinct, generally double, capsule. This form of parasite was thought to be present in carcinoma, partly because similar bodies were found, and partly because of the homology thought to exist between carcinoma and the disease of the rabbit known as *coccidiosis*. These tumors from a rabbit's liver, when examined under the microscope, show an irregular, atypical epithelial growth, described by some as a carcinomatous growth—not carcinoma, but that which has been described as malignant adenoma.

From the best authorities that I can obtain on rabbit's liver I find that these tumors are what we call proliferated cysts, or adeno-cystoma papilliferum. The parasites live in the epithelial cells of the bile-ducts, and set up a chronic catarrh, with polyposis. I do not think there have been any true coccidia found by any authority in the cells of carcinoma. I have looked over the literature very carefully, and cannot find proper description of them.

The next form of microörganism is the gregarine. This is an elongate, unencapsulated form with a nucleus situated at the enlarged extremity, and in its mature condition appearing much like a tadpole. It has been elaborately described by Korotneff, but I have been unable to find any such organism. Adamkewicz, who has written a number of articles on the poisonous nature of carcinoma, says that the carcinoma cells are neither epithelial cells nor derivatives of epithelial cells. Although he does not say so in so many words, he would regard the car-

cinoma-cells themselves as parasitic cells. According to this observer, they arise from very small granules, which develop into round cells, usually regarded as an inflammatory infiltration, and these in turn develop into the fully developed carcinoma-cells; and, moreover, he finds that these cells produce a poisonous substance, *cancroin*, which ultimately checks their growth.

Pfeiffer tells us that the parasite of carcinoma is neither a coccidian nor a gregarine, but belongs to a group of the microsporidia, which are described as amebasporidia.

Lastly come the views of observers who see the majority of bodies described by others, yet who do not find them to be either coccidia, gregarinæ, or sporozoa, but find them to represent various phagocytic and degenerative processes, and who conclude that to call these bodies parasites because they look like parasites is ridiculous. We must base our knowledge in this matter on some stronger fact than that of resemblance, before we can declare these bodies to be parasites. We must be able to cultivate them, or at least to make out some developmental stages of these microörganisms, before we can pronounce them alive, and then must cause the production of carcinoma by inoculation before pronouncing them specific.

Ruffer and Walker say they can see these parasites divide from 2 to 4, 4 to 8, and 8 to 16, and so on. This is evidence of a parasitic nature, but I have not observed such changes in the bodies that I have studied.

The results of my experiments show the presence in carcinomata of bodies that cannot be differentiated from parasites by their appearance alone. No one has been able to cultivate these cells outside of the body as Delépine has done the coccidia, or to produce carcinoma by inoculation of tissue containing them, or to carry out any of those laws postulated by Koch which give conclusive evidence of specificity.

I said a moment ago that there were some bodies in carcinoma that look like parasitic organisms. A great majority of carcinomata occur upon exposed surfaces, the lips, mammary gland, stomach, uterus, etc. All of these organs come in contact with the air, water, clothing, etc., and can receive in this way the spores of parasites and even the parasites themselves. Why could not these organisms, as well as bacteria, which are constantly, but accidentally, present, be found there? It would seem as if some of these bodies might be parasites, and yet have nothing to do with the etiology of the disease.

The most forcible argument that I can bring to bear upon the subject is the one based upon a study of the secondary growths. Carcinoma is a disease that gives rise to metastasis. It has been argued that this is a strong proof of its microorganismal nature. Tuberculosis spreads from place to place by the distribution of its bacilli through the blood and lymphatics; why should not the spread of carcinoma be due to similar distribution of its parasites? On superficial observation this seems to be true, but when examined carefully nothing is more fallacious. Tuberculosis is a simple inflammatory process, set up wherever its cause is operative. Carcinoma never presents a similar appearance, but always consists of an overgrowth of epithelial cells. As there are no epithelial cells in lymphatic glands to be stimulated to overgrowth by parasites conveyed there, a similar explanation of its production becomes impossible. But it may be argued that the carcinoma-parasites are conveyed to the lymphatics enveloped in the epithelial cells, which they subsequently stimulate to proliferation. This may be true; but I think the greatest proof of its unlikelihood is that the epithelium which is accidentally transported to a new environment retains its normal characteristics, even to the formation of quite typical glandular acini. Examination of the secondary carcinomata which grow in the omentum or in the lymphatic glands shows that quite numerous acini, almost typical of the parent-tissue, occur in the early stages of development. My explanation of this is that these cells have been accustomed to divide on a single plane. When they gain entrance into other tissues they retain this tendency, and, continually dividing on the same plane, line the cavities of the tissue with epithelium. This appearance remains for a certain length of time; then the tendency to proliferation continues and the cells multiply so rapidly as to entirely fill up the space. I cannot conceive of a cell which is the host of a parasite behaving in this manner.

It is a well-known fact that the tissue-changes are unusually active, and that epithelium seems to have a tendency to overgrow in old age. Old people are subject to brown patches upon the skin, which occasionally degenerate into epitheliomata. Warts on the hands of old people sometimes take on this change; so that a tendency to proliferation of epithelium is normal in old age. Carcinoma is most common in old age.

Why should not carcinoma simply represent an abnormal increase of this normal process and be the resultant of varied coöperating forces?

Probably the most common carcinoma is that of the mamma. This gland is one accustomed to proliferation of its epithelium and receiving constant reflex stimulation during menstruation, pregnancy, lactation, and the menopause. In such a tissue it is easy to conceive of a loss of proliferative inhibition in old age, increased proliferative stimulation from traumatism, by reflex action, even by bacteria and

protozoa accidentally present, producing the atypical growth called carcinoma, without having any one of these causes properly denominated as specific.

Although much truth appears to surround the parasitic theory, it is at present not proved, and the data that have been adduced are insufficient to establish parasitism in carcinoma.

CLINICAL LECTURES.

SPINAL HEMORRHAGE—EPIPLOCELE—RESECTION OF LEG FOR COMPOUND FRACTURE OF TIBIA, UNUNITED AFTER A MONTH.

Delivered at the Buffalo General Hospital.

By ROSWELL PARK, A.M., M.D.,
PROFESSOR OF SURGERY, UNIVERSITY OF BUFFALO.

SPINAL HEMORRHAGE.

This patient is a Pole, from whom we have with some difficulty obtained the following account: On Friday, while working underneath a large dredging machine, the heavy iron bucket, loaded with dirt, came down on the middle of his back. He became helpless at once, and when seen by the ambulance-surgeon he could not move the legs. In the evening the house-surgeon found an alteration in the contour of the spinous processes, there being a gap at the level of the ninth or tenth dorsal vertebra. There was also extensive bruising; a large hematoma or blood-extravasation having formed on the right side. There was apparently retention of urine, and the man was catheterized. On receiving this report by telephone I decided that it was not necessary to see him that night, and the next morning he had so far recovered that there was fair sensation in the legs and he could move them a little. He has continued to improve, although nothing has been done except to catheterize him thrice daily and to give him ordinary care in bed.

The diagnosis is of interest, as upon it depends the nature of the treatment. The ecchymosis requires no special treatment beyond cold applications. The displacement of bone may mean simply a chipping-off of a spinous process—a trivial injury—or it may mean a fracture of the spinal column proper, which is serious because it almost necessarily involves a disturbance of the contents of the spinal canal. Fracture of the spine is serious in proportion not to the extent of the bony injury, but to the amount of injury inflicted on the spinal cord. An injury to the back may, however, cause compression of the cord, without any alteration in the lumen of the bony tube on account of hemorrhage. Blood may be poured into the spinal canal from different sources. It may leak through from a ruptured vessel outside the spinal canal; it may come from the arteries or veins of the membranes of the cord; the vessels of the cord itself, or of the pia, may pour out blood into the substance of the cord, and finally the clot may be in the central canal of the cord when that is present. Hemorrhage, no matter how severe, requires an appreciable amount of time before pressure-symptoms develop. Dislocation, from fracture or otherwise, is almost instantaneous in producing paraplegia; hence, if an injury is followed immediately by a genuine paralysis, not the mere disability from stunning, the inference is that there is depression of bone. If, however, paralysis comes on within a few minutes or hours, the inference is that the compression is due to more or less rapid hemorrhage. Paraplegia coming on a week or more after an injury is due ordinarily to one of two things—the pressure of pus or a disorganization of cord-tissue following inflammatory changes. In this case we evidently have to deal with a paralysis produced immediately or very soon after an injury, and which has passed away quite rapidly, leaving only a trifling anesthesia and disturbance of function. To-day you see that the patient lifts his leg and moves it about quite freely, though he groans as if it hurt him. This is a marked improvement since Saturday. Trying him with a pin, you see that his sensibility is fair, though not exquisite. It is well also to test the muscle-sense by making gentle but forcible deep pressure. It is impossible to tell whether his lack of response is due to a phlegmatic disposition or to anesthesia. On the whole, sensation is good except in the genitals. The man does not seem to feel the introduction of a catheter or sound. You can see the ecchymosis of the back and note that he flinches when pressure is made over the injured spot.

My surmise is that he has extensive bruising, which accounts in part for the disinclination to move the leg; because any movements of the thigh involve tension on the glutei, which have suffered somewhat. I cannot believe that there has been depression of the spinal arch. In this large and complex group of muscles to which, collectively, we give the name erector spinæ, there is an extensive contused wound. I presume that there was a small hemorrhage somewhere in the spinal canal, for in a large number of cases of bruising alone I have failed to note even temporary paraplegia. However, the supposition of hemorrhage is a mere conjecture which I cannot prove to you. The symptoms are not very complete, nor are the facts upon which an accurate diagnosis would be based definitely known. Two or three of your number have expressed the hope that this would be a case for operation, but you will understand the futility of interfering when there is no indication that the bodies of the vertebræ are displaced.

In the catheterization, which constitutes the principal treatment, care must be taken not to set up a septic cystitis, to which paraplegic subjects are particularly prone. The man is eating heartily, and we must take care to have his bowels move every day. If there were any evidence of atrophy of the limbs we should have to stimulate the nutrition of the muscles by the faradic current and massage. Here, however, the indication is to let him alone as much as possible so as to allow the bruise to heal. He is turned from his back occasionally, so as to make sure that no bedsore is forming.

EPIPLOCELE.

This patient is a lad, eighteen or nineteen years old, who tells me that about three years ago he noticed a slight tumor within the scrotum, more on the right side, which seemed at first to be closely connected with the testicle, but which later separated from it and feels like an extra testis. It is growing gradually and is now as large as a hen's egg. Two questions present themselves: first, what is it? and secondly, what shall we

do for it? I prefer to take up the latter question first. Any neoplasm which grows and gives rise to trouble, I hold, should be removed, and the earlier the better. In regard to diagnosis, among the ordinary conditions with which we have to deal in this location are disease of the testicle itself, hernia, hydrocele of the cord, other tumors of the cord, of which lipomata are the most common. Two or three weeks ago I had occasion to operate on a man for inguinal hernia of the left side, and a small lipoma of the spermatic cord of the right side. This mass seems free from all signs of inflammation, and there is no history of traumatism. There is neither family nor personal history nor any objective manifestation of tuberculosis, and we can leave that out of consideration. Syphilis likewise can be excluded. The tumor is of about the same size and feeling as the testicle. On coughing, a certain amount of impulse is communicated to the mass, but not to the same degree as would be expected in the case of hernia. With the efforts at retching under the anesthetic more of the same impulse is communicated. This mass, which has gradually enlarged and descended, which is free from the testicle, and which is pushed down with the abdominal contents in coughing and retching, I take to be a hernia. Its solid consistence and the absence of tympany lead me to think that it is an epiplocele, that is, a hernia consisting of omentum. The neck of the sac is probably small, and the slight impulse on ordinary coughing is due to the firmness with which the mass is held in place.

The groin and scrotum are shaved and disinfected, and an incision is made obliquely over the course of the spermatic cord. In cutting down on the sac I find a band of muscle-tissue which represents the cremaster. A little serum flows out under pressure. On opening this sac you see a large mass of omentum. This could be put back into the abdomen, but I prefer to ligate it and cut away the redundant portion. It is always well to be extra cautious not to include in the ligature a small loop of intestine which sometimes projects just inside the neck of the sac of an epiplocele. This would be a fatal mistake if not rectified. The catgut ligature which I have applied here certainly includes nothing but omentum, and I will cut away the mass down almost to the thread. I next dissect off the remains of the sac from the omentum and spermatic cord. The latter is much more firmly adherent than usual. My earlier operations for the radical cure of hernia involved splitting up nearly the entire inguinal canal. In this operation, however, I design to follow a modified Kocher's method. Part of the inguinal canal is left unopened. Forceps are pushed down through the canal, brought out through the external ring where the hernia came out, so as to catch the sac and pull it up through the canal, and twist it into a mass at the level of the internal ring. Here it is sewed down to make a plug of tissue at this point. I twist it so that the twist will extend to the internal ring, and I shall attempt to destroy it as a sac, so that the place which knew it as a sac shall know it as such no more.

UNUNITED FRACTURE OF TIBIA.

This case is one of non-union following compound fracture of the tibia. It was seen by Dr. ——, a month ago, at the time of the injury. He found between the larger upper and lower fragments a small pyramidal fragment held in place by a periosteal hinge. Very properly he decided to try to save the leg in its entirety, and, accordingly, he wired the two larger fragments together with a double ligature passed through drill-holes, while a third wire was wrapped about the intermediate fragment. Every opportunity was given for the uniting of the pieces, but the vascular connection has proved insufficient. The middle fragment is now simply so much dead bone, which is not only useless, but a menace to the vitality of adjacent structures. It must certainly be removed. Two lines of treatment are open to us. We may amputate the limb, as was formerly done in almost every case of compound fracture, to prevent the septic trouble which almost immediately set in before asepsis was known; or we may resect the bones of the leg "in continuity." The patient will not listen to the suggestion of amputation; nor do I advise it, for resection offers the chance of a useful though shortened limb.

The limb is scrubbed with green soap, and then with corn-meal, and is irrigated with a bichlorid solution. The Esmarch bandage is applied to prevent hemorrhage. For the sake of convenience I shall dissect down upon the fibula first, cutting between the muscular bundles rather than through them. Wyeth's exsecting instrument is used, metallic retractors preventing the saw from cutting anything but bone. The second division of the fibula I will not make until the fragment of tibia is removed, so that I may know just how much of the fibula to cut away. You see that the intermediate piece of the tibia is irregularly pyramidal, one line of fracture being nearly transverse, the other oblique, and about four centimeters long. An assistant holds the leg firmly while the rough ends of the remaining portions of the tibia are sawed off smoothly with a chain-saw. As a result of the inflammatory reaction from the injury, the bone is very much sclerosed, and, therefore, it comes away with difficulty. The bones were fastened with wire, and a good result was finally secured.

THE INCH-AND-A-HALF INCISION AND WEEK-AND-A-HALF CONFINEMENT IN APPENDICITIS.

A Clinical Lecture at the New York Post-Graduate Medical School, February 24, 1894.

BY ROBERT T. MORRIS, M.D.,
OF NEW YORK.

GENTLEMEN: Three years ago this man suddenly awoke in the night with acute pain in the *left* side of the abdomen. He had bilious vomiting from then until the following noon, when the acute symptoms subsided, leaving general abdominal soreness, which lasted for four days. At the end of that time he got out of bed and resumed his work, feeling perfectly well. During the following year he had two similar attacks. One year ago the most severe attack occurred, and at that time he was obliged to remain in bed for three weeks. The diagnosis of appendicitis with abscess was made at that time, and the pain and tenderness became localized in the right inguinal region. The reason why the pain is felt anywhere in the abdomen excepting at the appendix

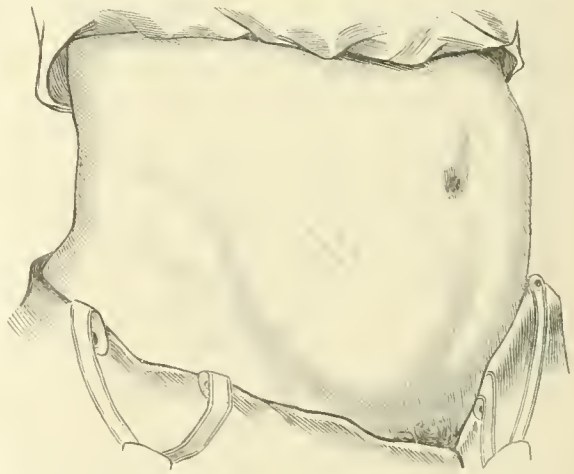
is probably because of the wide distribution of the sympathetic plexus, which supplies the appendix, and because the latter rudimentary structure, of low vitality, does not respond as quickly to irritation as do the other parts of the bowel. This man at present is quite well, but his physician has learned that appendicitis is an infectious exudative inflammation which does not disappear with disappearance of the symptoms, and as a personal friend of the patient he does not wish to witness the suffering incident to another exacerbation of the inflammation. I shall attempt to remove the appendix through an incision in the abdominal wall one inch and a half in length. This operation was not originally devised for cases like the one before us. I intended it for cases in the early stages of the first attack, before the formation of adhesions or pus, and for the purpose of developing an operation simple in itself, which would be dreaded less than a single day of suffering from appendicitis. Gradually, however, one finds himself becoming more expert, so that after a little one will readily remove through the short incision infected appendices that are firmly imbedded in adhesions, and even in patients who are decidedly stout. In cases with pus, or with masses of infected new peritoneal exudate, a longer incision will be necessary. The advantages of the inch-and-a-half incision are several. Scars are unsightly to anyone of artistic taste, and the shorter the incision the shorter the scar. Time spent unnecessarily in bed is time wasted, unless one can utilize such an opportunity for reading. The general disturbance caused by an incision varies in proportion to the size of the wound. An incision one inch and a half long causes very little disturbance, and it confines the patient to his room for only a week and a half. An incision two inches long will confine the patient to his room for two weeks, and an incision three or four inches long will require nearly three weeks for good, firm union of divided tissues.

A line one inch and a half in length is now measured off on this patient's abdomen, in a direction that follows the trend of the external oblique aponeurosis, and at a point in the linea semilunaris which is over the cecum. As soon as the peritoneum is cut I insert a loop of catgut through the transversalis and internal oblique aponeuroses at the cephalad angle of the wound, to serve as a guy-line for pulling up these structures when the wound is ready for suturing. The cut margins of the two deeper aponeuroses are difficult to capture unless we have such a guide, because their muscles pull them far away while we are at work with the appendix.

The colon you all recognize at a glance, because of its longitudinal muscular ribbons, all of which "lead to Rome." We cannot possibly fail to find the appendix if any one of these ribbons is followed; but in order to follow it in the right direction, I determine the direction in which the bowel runs by exciting reversed peristalsis with a little pinch of salt placed upon the colon.

The cecum is drawn up through the wound, but adhesions prevent withdrawal of the appendix. One finger introduced into the abdominal cavity separates the adhering mass from parietal peritoneum and from the mesentery of the ileum.

I would not advise anyone to do this with his first cases. It is better to work by sight until the fingers are trained. Now you all see the appendix, which is covered with adhesions like a spider's-web about a slug, binding it firmly to the cecum. The appendix is peeled out with the handle of a scalpel. Scissors are used for snipping through the peritoneal and muscular coats close to the cecum, and a strand of finest eye-silk is employed to ligate the tube of mucosa still uncut. This leaves the tiniest of stumps, with the tiniest of ligatures, when the appendix is cut away. Three Lembert sutures bury this stump deeply, so that peritoneal adhesions can wall it in securely in a few hours. You observed the result of leaving the stump of an appendix unburied, in a case upon which I operated before the class last Saturday. In that case the infected stump had caused an inguinal abscess and extremely tough adhesions, although the adhesions may have been due to the employment of chemical antiseptics within the peritoneal cavity. Chemical antiseptics and plain water injure the serosa, and adhesions result; but normal saline solution which we use here does not damage the peritoneum. The large ragged-looking portion of cecum that was involved in adhesions in this case to-day is now covered thickly with aristol, and after waiting a full minute to allow a lymph-coagulum to form with part of the aristol, the surplus powder is blown away. Aristol used in this way prevents reunion of adhesions. It is one of the most practical of resources, but one that I have some difficulty in persuading surgeons to adopt. I have separated old adhesions a great many times for former patients whose peritoneal surfaces had been injured by the routine technique of the day, and have relieved them completely with the aristol film.



The inch-and a-half incision appears a little wider than it should because of blurring in the photograph.

In closing this wound an assistant pulls on the guy-line, and the cut margins of peritoneum, transversalis fascia, transversalis, and internal oblique aponeurosis appear in plain sight so that they can be accurately sutured with fine catgut. If we did not do such painstaking work here the patient would not be ready to leave his room at the end of a week and a half. The cut margins of the external oblique aponeurosis are approximated with two interrupted catgut sutures, and last of all we apply the prettiest resource of all. This consists in putting the skin-wound upon the stretch with two

small hook retractors so that skin-margins are adjusted with precision, and united with a continuous suture of the finest catgut. Such a scar is hardly to be seen after the wound is healed. One of the men in our audience you saw me operate upon ten days ago for the removal of a gangrenous appendix. I will ask him to kindly step down into the amphitheater and remove his clothing so that you can see the scar. If it were not for a slight redness which has not quite disappeared, the scar-line would not be visible ten feet away; and yet a week and a half ago some of the members of the class asked me after the operation if the patient could live. They were newly-arrived members who had not seen the inch-and-a-half incision. Two hours from now I shall be engaged in an argument with several physicians who have not been present at any of these operations, and they will explain by apparently clear reasoning that the inch-and-a-half incision is impracticable in appendicitis cases.

CLINICAL MEMORANDA.

LARGE SUPPURATING CYST OF THE PANCREAS; PANCREATOTOMY; RECOVERY.

By WILLIAM W. ASHHURST, M.D.,
OF CHIHUAHUA, MEXICO.

Francisco G., aged thirty years, of Mexican birth, a machinist by trade, consulted me June 1, 1893, in regard to a tumor of the abdominal cavity, which had been troubling him for some time.

He confessed to having been a very hard drinker until about a year before. About six months before consulting me he began to suffer from indigestion, and, seeking medical advice, was told he had gastric catarrh. He was treated by means of lavage of the stomach, but experiencing no relief consulted another physician, who detected the presence of an abnormal collection of fluid in the abdominal cavity. Paracentesis was practised twice, there being withdrawn each time, according to the patient's statement, a small quantity of a clear, yellowish fluid. At no time did he suffer any pain, but he was constantly distressed by his inability to take anything into his stomach without immediate and great discomfort, and by the constant sense of weight and soreness of the contents of the abdominal cavity. Recently he had vomited on several occasions, but the material vomited seemed to be only the food he had eaten. For some weeks he had subsisted entirely upon liquid food, and was able to take only a very small quantity of this at one time. He was now somewhat emaciated, and stated that he had lost twenty pounds in weight during the last six months. He was not aware of having had any fever since being taken sick, and said that his bowels and kidneys acted naturally and regularly. His temperature was at this time normal, and examination of his urine on two occasions failed to reveal anything abnormal.

On examining the abdomen there was apparent a large fluctuating tumor, nearly globular in shape, reaching from the xiphoid cartilage to below the umbilicus, and in a lateral direction entirely filling the abdominal cavity. On percussion the tumor seemed continuous with the liver. My diagnosis was a probable hydatid cyst of the liver.

As it was evident that paracentesis was of no avail in this case, its trial on two occasions having produced no benefit, I advised an exploratory celiotomy with a view of determining the diagnosis, and taking such measures for relief as might then suggest themselves.

On June 6, 1893, the patient was anesthetized by means of chloroform, and the surface of the abdomen was shaved and scrubbed with soap and water, and then with a solution of corrosive sublimate of a strength of one to one thousand. The abdominal cavity was opened at its most prominent part by a linear vertical incision, three inches to the left of the median line, and extending from one inch below the margin of the ribs downward for four inches. Beneath the parietal peritoneum was found omentum instead of the peritoneal covering of the liver, as was expected. It was, therefore, evident that the stomach was above the tumor, compressed between it and the liver, and that the tumor itself was situated in the lesser cavity of the peritoneum.

Cutting through the omentum this was found adherent to another layer of peritoneum beneath, which covered the tumor itself. This was still thought to spring from the liver, but was now believed to be connected with the part of it posterior to the lesser omentum. Satisfactory manual exploration was impossible, owing to the size of the tumor. I now introduced a trocar of about 4 mm. diameter through the cyst-wall, and drew off about a gallon and a half of a turbid, yellowish-green, rather thin purulent fluid, of a sweetish, peculiar smell. After withdrawing the canula there was room enough around the tumor to make a manual exploration of the abdominal cavity. In the upper part of the incision now appeared the stomach, which had found room to descend and now had a little gas in it. Behind and above this could be felt the anterior edge of the liver; the small and large intestines were crowded down far below their normal position. The spleen was normally situated, as were also both kidneys. The base of the cyst appeared to extend from the under surface of the liver downward to the region of the kidneys.

The surface of the cyst was now stitched to the edges of the parietal incision with a continuous silk suture, and a longitudinal incision was made into it. This was followed by the escape of a large quantity more of thin purulent fluid and of a white granular substance, which in appearance and consistence much resembled boiled rice. From the bottom of the cavity I removed with my hand a solid mass about three inches long and an inch broad, which had been floating about in the fluid, and which, on more careful examination, proved to be a piece of pancreas-substance, in appearance somewhat changed from its natural condition. It was of a grayish color and of a flabby, soft consistence, having apparently undergone fatty degeneration, though no microscopic examination was made of it. The sac of the cyst was about 3 mm. thick, and rather weak, the stitches showing a tendency to tear through it.

The wound was closed with silk sutures, a rather thick rubber drainage-tube, eight inches long, being used to drain the cavity, and an antiseptic dressing was applied and held in place by a Scultetus bandage.

The patient's recovery was not interrupted by any serious mishap. At first there was a profuse discharge of pus through the tube, and the dressings required

renewal twice a day. On June 15th I commenced injecting the cavity daily through the tube with a solution of permanganate of potassium, and by July 1st the discharge from the wound had become perfectly clear, very much resembling saliva. The drainage-tube was now entirely dispensed with, but the pancreatic fistula remained open, in spite of attempts to encourage its closure by injections of tincture of iodin, until August 25th, when it closed permanently. For about ten days from the time of the operation the patient was kept on a liquid diet; but this was due to his general condition, and not because digestion itself was in any way particularly disturbed. Since that time he has been able to eat anything without discomfort.

On September 1st he returned to his work as a machinist, and reported that he weighed twenty pounds more than before the operation, which, allowing for the weight of the fluid removed, would indicate a gain in healthy tissue of at least thirty-five pounds.

On February 28th he still remains well, but unfortunately has gone back to the drinking-habit.

The especially interesting features of this case are: First, the difficulty in diagnosis. The dyspeptic symptoms were only such as would naturally have been caused by the mere compression of the stomach, the unaffected portion of the pancreas apparently doing the work of the whole gland. On anatomic grounds alone I believe that, unless seen in an earlier stage, it would have been absolutely impossible before the operation to locate exactly the tumor, although possibly by more frequent examinations the position of the stomach might have been ascertained. By more frequent examinations of the temperature, too, some elevation might have been detected. The diagnosis, indeed, was not made until the loose piece of pancreas rendered it evident.

Secondly, the size of the cyst. The only case of pancreatic cyst or abscess I can find recorded which at all approaches this in size, is Bozeman's case of pancreatic cyst, which contained two gallons and a half of fluid, or half a gallon more than this held.

Thirdly, the contents of the cavity. The loose piece of pancreas-substance is spoken of as occasionally occurring in pancreatic abscesses; but all the other facts seem to me to indicate that this was primarily a simple distention-cyst, afterward undergoing suppuration, perhaps from the use of a dirty instrument when paracentesis was performed. The absence of the constitutional signs of suppuration, the history of a clear fluid having been withdrawn, the great distention without rupture of the capsule of the pancreas, the rice-like substance found in the fluid, the very character of the fluid itself, all suggest to my mind that it was a cyst afterward undergoing suppuration, and not primarily an abscess.

Finally, the etiology and termination. The cause of the disease in this particular case is certainly obscure. No calculus was found. The persistence of a pancreatic fistula after the operation indicated that there was a backward flow of pancreatic fluid from the portion of the gland remaining, possibly caused by continued obstruction of the main duct or one of its branches, or more probably occurring simply because there was less resistance to the flow in this direction than through the natural channel. The final closure of the fistula, without return of the symptoms, indicates that if there was continued obstruction this has been removed, which, in the case of an impacted calculus, is rather unlikely, the impaction having lasted so long; or that the portion of the gland from which the backward flow occurred has undergone atrophy, which is still more unlikely. The probabilities are that all that portion of the gland the secretion of which was originally prevented from passing down the main duct, was removed at the time of the operation, having early undergone fatty degeneration from pressure, or a cutting-off of its blood-supply; that the pancreatic fluid was discharged through the fistula after the operation simply because that was its readiest mode of exit; and that when by the natural process of cicatrization the fistula closed, the fluid found an exit by its natural passage, the canal of Wirsung. As for the cause of the original obstruction, if not a calculus, this was probably of catarrhal origin, perhaps resulting from the man's previous intemperate habits. At any rate, I could learn of no cause that seems more probable.

CARCINOMA OF THE LARYNX, WITH CONSECUTIVE EPITHELIOMA OF THE LIP.

By CHARLES P. GRAYSON, M.D.,
of Philadelphia;
physician to the department of diseases of the throat and nose, hospital of the university of pennsylvania.

In spite of the abundant lymphatic supply of the larynx, metastasis associated with carcinoma of this organ is so rare that its occurrence has been denied by more than one author. The rich experience of Morell Mackenzie could furnish but a single instance of it. During the past decade, however, a number of cases have been recorded in which secondary deposits were found in the mediastinal glands, the lungs, and in the abdominal cavity. As a rule, glandular involvement is a late feature of malignant disease of the larynx, usually not making its appearance until ulceration has existed some time. Contamination of the blood-current, therefore, unless direct, and transportation of the infecting cell (or parasite?) to remote regions, are proportionately delayed or do not occur at all. Of the varieties of laryngeal carcinoma, divided by Krishaber according to their location into extrinsic and intrinsic, the former is the more likely to occasion glandular infiltration, and ample explanation for this difference will be obtained by reference to Sappey's demonstration of the peculiarities of the lymphatic distribution in this region.

This brief preface serves to introduce the two points that make the case here reported an exceptional one, viz., that a labial growth apparently metastatic and consecutive to a laryngeal carcinoma has occurred, and that this latter at the time of writing this report is still wholly intrinsic. The relative situation of the secondary to the primary growth affords additional matter for surprise and speculation.

Frank S., thirty-four years of age, married, and a policeman by occupation, has a family history, recent and remote, quite negative. Two brothers are living, both in excellent health. The patient has three vigorous children, and, until this present illness, has himself enjoyed uninterrupted health.

In December, 1891, a severe attack of influenza confined him to the house for three weeks, but, though greatly reduced by this illness, his recovery was complete and during the ensuing year he was as well and active as ever. In December, 1892, he had a second experience with influenza. This attack was of briefer duration than the first, but left him with what seemed like an obstinate "cold in the head." This remained limited to the cavities of the nose and naso-pharynx for some two or three weeks, and then moved downward and established itself in the larynx. Its invasion of this cavity was announced by the sensations usually accompanying an irritative hyperemia of its mucosa—dryness, heat, and tickling—and these provoked frequent but futile efforts to clear the throat. There was neither cough, dyspnea, nor dysphagia, and for some time the voice was not noticeably impaired. He entered, toward the latter part of January, upon a two months' course of treatment by a homeopath, from which he emerged destitute of voice and with a great increase of laryngeal secretion. There is no obtainable history of hemorrhage.

The patient reported at the Throat Department of the Hospital of the University of Pennsylvania, August 29, 1893, coming, he announced in a harsh whisper, almost solely that his voice might be restored. He did not suspect that anything serious could be the matter with his throat, since there was an entire absence of pain and, excepting the aphonia, he had little to complain of but discomfort. He was of good color, muscular, and seemed in excellent general condition.

Nothing abnormal was discovered in the nasal cavities or the pharynx. The laryngoscope disclosed, also, a normal epiglottis, but at this point health came to an abrupt stop, and of the rest of the larynx disease held complete possession. The two ary-epiglottic folds were swollen to dimensions that wholly obliterated their original outlines. The inter-arytenoid space was represented only by a shallow fissure that marked the line of contact of the huge masses enveloping the arytenoids. The mucosa and submucous tissues were not edematous, but were shown by the probe to be the seat of a dense and resistant infiltration. Within the laryngeal cavity a degree of ulcerative destruction so advanced was found that its existence for some months could not be doubted. This ulceration was limited to the right side, and its upper boundary came within a line or two of the swollen and overhanging ary-epiglottic fold. The ventricular band was deeply excavated, the vocal band had vanished, and the lower margin of the ulcerative process was lost to view in the depths of the sub-glottic space. On the left side there was great infiltratory swelling, but, as yet, no superficial breach of tissue. The borders of the ulceration on the right were marked by a luxuriant fringe of nodular excrescences, and the whole appearance of the growth was unmistakably malignant.

The examination of the larynx being completed, the patient drew the lower lip downward and exposed an ulcer on its inner surface to the right of the middle line. This had been first noticed three weeks before. It had come, he said, like an ordinary "cold sore," but had gradually enlarged its dimensions and changed somewhat in appearance. At this time it was almost circular and about 8 mm. in diameter, its surface almost flush with the surrounding tissue, and with very little induration of its base. Alone, the character of the lesion would scarcely have aroused suspicion, but its coexistence with a certainly carcinomatous laryngeal growth led to its closer scrutiny and a more careful marking of its progress. It was early submitted to Dr. John Ashhurst for opinion and was regarded by him as an epithelioma. In the effort to check its extension several agents have in turn been tried and have failed, the submaxillary glands have gradually enlarged, and, within the past few weeks, the patient has begun to exhibit some signs of the long-delayed cachexia of malignant disease Glandular involvement that can be traced to the laryngeal disease is still very slight. The pre-laryngeal gland can be felt lying upon the crico-thyroid membrane, but the group of glands on either side of the neck beneath the thyro-hyoid membrane, to which the lymphatic vessels of the upper portion of the larynx are tributary, still eludes detection. A few of the glands that flank the trachea are slightly enlarged, but not nearly so much as the stage of the disease in the larynx would lead one to anticipate.

With the completion of this statement of the existing disease the bare report of the case ends, but several questions may suggest themselves that have both interested and puzzled me. If, for a moment, we admit that the labial growth is a metastatic one, by what path did the infecting cell coming from the larynx reach this point—through the blood-current or by way of the lymphatic vessels? Or, putting aside the theory of metastasis, is it possible that the lesion upon the lip was in its beginning quite innocent and that a malignant transformation ensued upon an auto-infection at this point? Or, finally, may we regard the ulcer as having been malignant from its inception, yet at the same time as wholly independent of the laryngeal disease? In other words, is the synchronism of these two growths simply the expression of a diathetic state predisposing to the development of multiple malignant neoplasms?

The first of these questions is not easy of solution. If we consider the lymphatics, we find that they afford no path, either direct or circuitous, by which the carcinoma-cell could have been naturally conveyed to this point by the lymph-current. The downward course of this stream would oppose the upward movement of the infecting agent toward the lip, and unless we attribute to the cell an inherent migratory power of sufficient strength to overcome the force of such an opposing current, we are compelled to look elsewhere for a means of transportation. If, therefore, we turn to the bloodvessels, we are confronted by the facts that up to the day of his placing himself under treatment, which was three weeks subsequent to his discovery of the labial sore, it is extremely improbable that there had been any contamination of the blood, either direct or through the usual medium of the lymphatic system. There had been no hemorrhage from the laryngeal lesion, the sputum had contained at no time even a trace of blood, and glandular involvement was so slight that its detection required a most careful search. It may be offered as further counter-evidence that it has not been until the last two or three weeks that the customary cachexia has been at all discernible.

Abandoning, therefore, for anatomic and other reasons, this theory of metastasis, what has the second

theory to say for itself—that which supposes a primarily innocent ulcer to have acquired malignancy through its constant exposure to the irritating discharges and tissue-débris coming from a neighboring carcinomatous growth? This, at first thought, may not impress one as being a very likely accident, but instances are not wanting in the literature of carcinoma that will afford it a quite substantial support. In the *British Medical Journal*, 1889, vol. i, p. 133, Newman reports a case in which an epithelioma springing from the right vocal band effected in time an erosion upon the opposite band at its point of contact with it, this proving to be the first step in the production of a second and identical growth; one, however, that was unquestionably the result of auto-infection and not of metastasis. Additional cases might be referred to which, though perhaps clinically less clear than this one, yet afford almost equally strong presumptive evidence of a similar mode of origin.

The third and last question affords wide opportunity for conjecture, but of weighty evidence concerning the relationship or dissociation of these two growths there is little to be offered. It may be said, however, that if they are to be regarded as wholly independent of one another the patient presents a remarkable instance of "original sin" in the matter of malignant disease. His family history is entirely without blemish of this character, his parents and grandparents having lived to advanced age and dying from causes that could have exerted no sinister influences upon succeeding generations. Heredity, indeed, is not now admitted to play the same prominent part in the diagnosis and prognosis of suspicious new-growths that it once did. Dr. Herbert Snow, of London, in a recent article in the *Medical Press and Circular* concerning improved methods in carcinoma-treatment, says: "Heredity is an element which is much more likely to mislead in diagnosis than the reverse. I have learned that a person who comes to me with a strong family history of cancer is much more likely to be suffering from some innocent ailment than from this dreadful scourge."

In conclusion, a word may be added concerning the curious frequency with which malignant neoplasms have been recently observed to follow in the wake of influenza. Of course, no specific causal relationship will be alleged to exist between epidemic influenza and carcinoma, but it does at first glance seem something more than a mere coincidence that the one should follow the other so often as the medical periodicals of the past year or two have asserted it to do. It is, not improbably, to the exceptionally exhausting nature of this disease and to the intensity of its depressing effect upon tissue-vitality, as well as to the various vaso-pareses it leaves behind it, that the early appearance and rapid development of malignant disease are due. The recorded examples of this sequence are too numerous to permit of individual reference, but I may add to their number the one that forms the subject of this report, and, also, two others of which I have had charge—one, a hostler in the Veterinary Department of the University of Pennsylvania, who died last spring of a laryngeal epithelioma, the throat having first attracted his attention within ten days or two weeks after an attack of influenza; the second, a clergyman who, two months after a severe attack of influenza in September, 1892, was compelled by loss of voice to give up his church, this being the first symptom of a malignant laryngeal growth the progress of which was so rapid that it necessitated tracheotomy in August last and proved fatal in October.

CASE OF ATTEMPTED SUICIDE BY SULPHATE OF MORPHIN TREATED BY PERMANGANATE OF POTASSIUM; RECOVERY.

By H. D. WALKER, M.D.,
of Franklinville, N. Y.

In view of the recent experiments by Dr. Moor, of New York, tending to show that the permanganate of potassium is an antidote for poisoning by morphin, I think it is proper to report the following case.

Between the hours of two and four o'clock P.M., on March 14th, Mrs. A., aged fifty-eight years, took, with suicidal intent, as nearly as can be ascertained, about forty-five grains of morphin sulphate. I was called to see her at nine o'clock P.M., and found her lying upon a sofa, sleeping soundly; the pulse was 90; the respirations not stertorous, but irregular, and averaging about twelve per minute; the pupils very extremely contracted—like pin-points. She could be roused by speaking loudly to her, but would immediately go to sleep again. She could not walk or stand alone, and when raised upon her feet staggered about and would have fallen if not supported. She responded to questions when thoroughly aroused, and on my asking her how much and when she had taken morphin, she denied taking any, and asked if we thought she would lie about it. The following history was obtained: She was alone in the house from one until four o'clock P.M., when a neighbor called and found her lying upon the sofa in a dazed and delirious condition, her face highly flushed and of a dark-red color. Her husband was sent for and arrived soon. She was then very sleepy, but could be roused, and suspecting she had taken morphin he questioned her about it. She denied this, and not knowing how to account for the state she was in he sent for me. On careful inquiry I could not learn that there had been any morphin or opium in the house for several months, but being thoroughly satisfied from the symptoms that it was a case of poisoning from opium or one of its preparations, and believing that an emetic would avail little, on account of the time that had elapsed since it was taken (at least five hours), I concluded to give the permanganate of potassium a trial. I immediately procured some from my office, a short distance away, and gave her five grains dissolved in a glass of water. In fifteen minutes from this time I gave her two and one-half grains more, in half a glass of water, and the last dose was repeated every quarter of an hour until she had taken fifteen grains of the antidote. Her condition at this time was so much improved that I did not think it necessary to give her more, as she could easily be kept awake. She was then placed in a rocking-chair and given a paper to read. This was exceedingly difficult for her, on account of the contraction of the pupils—so much so, in fact, that she could make out but a few words of the coarsest print. I remained with her until midnight, at which time I considered it safe to leave,

after giving directions that she should be kept awake, and if she became very sleepy she should be given more of the permanganate of potassium.

On my visit the following morning I found that she was greatly improved, and on questioning her she gave me the following history: Having an idea that she was a burden to her husband, she determined to end her days in such a manner that no one would suspect that she had taken anything for that purpose; so she procured a dram of morphin sulphate from a neighboring city, the week before, directing the same to be taken from the vial and sent by mail in an envelop. This she kept until the afternoon of the 14th, when, as the clock struck two, she took the first dose, which was as much as she could conveniently hold in the hollow of her hand, and she believed it was enough to kill her. This, as well as subsequent doses, was taken dry, with a drink of water to wash it down. As the clock struck half-past two, feeling no effect from the dose taken, she took another one. Within a short time after this, in order to make sure, she took two or three doses more. At no time was there any vomiting, so that all of the morphin must have been retained. In corroboration of this, she told us where to find the morphin that was left. We found this where she had fastened it with a carpet-tack, in an envelop, on the back side of a bureau-drawer, when she took the first dose. There were five tack-marks on the drawer, showing it had been removed four times, and from this it is believed that five doses were taken. There were ten grains left in the envelop, so that about forty-five grains were gone.

The foregoing history would be imperfect and misleading did we not record the patient's previous habits in regard to morphin. This will not only help to explain why she was not more seriously affected by the amount taken, but it is also necessary in order that we may not overestimate the effects of the permanganate given as an antidote. I am informed by her husband that for twenty years she had taken morphin, until about the 15th of last October, since which time, I am well satisfied, she has taken none until now. He tells me she took for quite a time before leaving off the habit, about ten grains of morphin three times daily. Now, in view of this history and her symptoms, I am not prepared to say that in her case the amount taken with suicidal intent would have been a fatal dose; on the contrary, it seems probable that she might have recovered without the use of the permanganate. But I am favorably impressed with the action of the antidote, and believe that it aided much in relieving the woman of the effects of the poison. Whether it did this by acting on the morphin which still remained unabsorbed in the stomach, or upon that which was brought back to this organ through the circulation, as suggested by Dr. Moor, I shall not attempt to decide. The first view seems to me more probable than the last.

In regard to the action of the permanganate as an antidote to morphin injected subcutaneously, I confess I am somewhat skeptical. If a large dose were given in this way, I fear that the patient would die before enough of it was brought to the stomach, through the circulation, to be acted upon by the antidote. I certainly should not advise as an experiment that a poisonous dose be given subcutaneously to a person for the purpose of testing the effects of the permanganate through the stomach.

HYDATIDIFORM MOLE; REPORT OF A CASE.

By H. F. C. HEAGEY, M.E., M.D.,
of Cochranville, Pa.

The infrequency of hydatidiform mole, or myxomatous degeneration of the placenta, and our ignorance of the primary cause, make such cases interesting. Many and various have been the opinions advanced as to the nature of the "vesicular mole," but the theory of Virchow, "myxomatous degeneration of the villi of the chorion," is now generally accepted. If the modern erroneous idea that a hydatid must always contain echinococci can be gotten rid of, and the term be taken in its original and correct meaning of a water-like cyst, none need object to the now almost universal designation "hydatidiform mole."

Modern research shows that this formation is not likely to occur independently of conception, and that the usual exciting cause is most probably maternal, and due to some dyscrasia, as carcinoma or syphilis; yet it must not be forgotten that echinococci, from their very nature and habits, might be here, as well as elsewhere in the body, the cause of the degeneration independently of conception, or the cause of the degeneration of the chorial villi. Rokitansky says that it can be an independent growth—a "uterine acephalocyst." Here the microscope will bring the decisive test, and prove quite valuable from a medico-legal status. Parvin (*Science and Art of Obstetrics*) says: "The disease is not frequent. Madame Boivin saw but one case in 20,375 deliveries."

The following case adds testimony to the fact that the disease is most frequent in the aged and multiparous; it very faintly suggests a carcinomatous dyscrasia, while a tuberculous family history here, as noticed in other cases reported, may not be a mere coincidence.

It occurred in a farmer's wife, fifty-two years old, healthy, quite stout, and weighing 220 pounds. She is the mother of eight fairly healthy children, and has had no miscarriages. She had slow enteric fever at seventeen; puerperal fever with her second child; and congestion of the liver after her last confinement, eight years ago. Her mother is living; her father died at eighty-four, with chronic bronchitis and a fractured hip; she has had no sisters; of two brothers, one died at forty, of asthma associated with bronchitis, and the other died at forty-five, of pulmonary tuberculosis. One paternal uncle died of asthma associated with bronchitis; another paternal uncle died of carcinoma. The menses first appeared at fourteen, and were regular from her last confinement until July, 1893. This suppression, except for a slight "show" now and then, and a few very slight symptoms, was supposed by her to be due to the approach of the menopause. I was called hurriedly to her (seven miles distant), October 7, 1893, but by the time of my arrival rest in bed had already arrested a moderately severe uterine hemorrhage. Slight metrorrhagia continued during the next four weeks. There was no pain or any discomfort, except a feeling of weight in the pelvis. Another free uterine hemorrhage occurred on November 6th, which was again arrested

before my arrival. The pulse was 85, the temperature 98.5°. Examination *per vaginam* showed the os to be slightly dilated, but quite securely plugged with some membranous substance. The bowels moved quite freely during the night and on the morning of the 8th, but there was severe headache, nausea, and colic. Bismuth and opium relieved the condition of the bowels, and a combination of bromid and caffein the headache. I was again summoned hastily on the morning of November 10th, and found the woman beginning to rally from a shock. Another severe uterine hemorrhage had taken place, but had been checked by the application of vinegar and a tampon, in which I had previously instructed the nurse. The pulse was 120, but regular, and not very weak; the temperature 98°. The nurse said that the patient had been rather uneasy for a short time, when suddenly she announced that something had given way. A mass was passed weighing probably three pounds, whose characteristic cystic degeneration at once proved it to be a hydatidiform mole. An attack of syncope and the hemorrhage followed this. The os was contracted, but a slight hemorrhage continuing, I reapplied the vinegar tampon. The patient rallied quite readily. Eight hours later the pulse was 85, the temperature 99 5°. There were slight hemorrhages on the 11th and 12th, and a small placental mass, only a part of which was degenerated, was passed. A slight odor indicated decomposition, but there being no signs of absorption, I ordered a vaginal douche of hot water and sodium chlorid. The patient convalesced with no unusual symptoms, except a slight attack of supra-orbital neuralgia on the 11th. A pulse of 80 is normal for her. There was no rise of temperature except during reaction on the 10th. The microscope revealed no echinococci. There was no trace of a fetus. Degeneration was almost complete, except throughout probably one-tenth of the mass. On March 3, 1894, there had been no return of the menses, and the patient was in her usual good health.

I could suggest no better illustration of the degenerated portion of the mass than Fig. 100 in Parvin's *Science and Art of Obstetrics*.

THE VECTIS IN VERTEX-POSTERIOR POSITIONS OF THE FETUS.

BY JOHN GRAHAM, M.D.,
OF PHILADELPHIA.

PROFESSOR S. D. GROSS urged in eloquent language the revival of the lost art of bloodletting, and I wish to send forth my humble appeal, to save from possible loss, by long-continued disuse, an instrument, the vectis, that I have found of great value in obstetric practice. A well-known teacher of obstetrics in Philadelphia calls it a supernumerary instrument. A well-read recent graduate, whom I recently met in consultation, had never seen the instrument.

What unpleasant memories "vertex posterior" recalls to the mind of the obstetrician! Long and weary waiting on the part of the physician, suffering and exhaustion on the part of the woman—a forceps delivery, and probably a torn perineum.

Lusk says that so long as the occiput looks to the rear it is the rule in midwifery practice to refrain from the use of the forceps, which of necessity prevents forward rotation from taking place. He also says attempts to rotate the occiput toward the symphysis by instrumental means are rarely successful; the vagina, being an elastic tube, turns with the head, and when the force is removed the vagina turns the head back. Now, it is undoubtedly true that the vagina is an elastic tube, and it is equally true that in turning the head with the vectis the vagina sometimes, but not always, turns with it; and that in the cases in which the vagina turns with the head on relaxing pressure, the head tends to go back with the vagina. But why relax our pressure? The important point conceded is that the head can at times be turned, and I have found that by keeping up the steady pressure on the side of the child's head with the vectis, a few uterine contractions will generally fix the head well down between the tuberosities of the ischii, and the trouble is over.

Long experience has made me fairly skilful in the use of the obstetric forceps, and many times have I watched cases in which the head was in the pelvis and the vertex pointing to the right or left, and with each pain rotating now 45 degrees to the front, and again 45 degrees toward the sacrum, but on the recession of the pain always returning to its position, crosswise in the pelvis. Watching my opportunity, when the vertex has temporarily turned toward the front, I have rapidly put on the forceps, endeavoring to adjust the instrument to the sides of the head, only to find that in the majority of cases I had converted the case into an ordinary vertex-posterior.

Of late years I have seldom been tempted to use the forceps as a first resort in this class of cases, for I have found that with the vectis a majority of them can be converted into vertex-anterior cases.

When the head is tightly locked in a transverse position in the pelvis, all efforts to turn the vertex to the front with the vectis will, of course, fail; but no harm is done by the use of the instrument, and failing in the endeavor, it is my custom, after long and patient waiting, to try to complete the rotation of the vertex backward, and then apply the forceps, delivering slowly and carefully.

I apply the vectis over the parietal bone, the parietal eminence entering the fenestrum of the vectis, and use the instrument partly as a lever of the first class and partly as a tractor, making my extended fingers and not the woman's soft parts the fulcrum. The traction is a very important and efficient part of the use of the instrument, and largely assists in drawing down and fixing the vertex after it is turned to the front. Used in this manner, the vectis has enabled me to give to many women safe and easy deliveries. By preventing vertex-posterior deliveries it has, I am confident, enabled me to save the lives of children, and failure in its use has never injured mother or child.

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MEDICAL PROGRESS.

Changes in a Hand Fifteen Years after Division of the Median Nerve.—GRIFFITHS (*Journal of Pathology and Bacteriology*, vol. ii. No. 3, p. 346) has reported the case of a man, seventy-three years old, who, while engaged in cutting chaff, at the age of fifty-eight, had the left arm caught in the machinery just above the elbow and cut

upon its inner aspect to the bone. There was much bleeding at the time, and the hand at once became numb and useless. About a year after the accident a certain degree of feeling had returned to the skin of the hand. Two years later the tip of the middle finger began to fester and ulcerate, the nail dropping off and the end of the finger disappearing bit by bit, without the coming away of any pieces of bone or obvious sloughing and gangrene of the parts. Some time afterward the same ulcerative process began in the tip of the index finger. This ulceration was attended with but little pain. The activity of the ulceration depended largely upon the state of the weather and the season of the year, being aggravated by cold and ceasing in warm weather. By progressive ulceration, a sort of liquefactive necrosis of soft parts, tendons, and bones, the distal portions of the index and middle fingers were lost. Six or seven years after the accident the ring and little fingers became slightly flexed, the flexion gradually increasing and the fingers becoming quite painful. Some seven years later the extremity of the thumb began to ulcerate, and continued to do so, with slight interruptions during the warm weather, until the man came under observation. The hand and forearm were much wasted from atrophy, especially of the muscles. The index and middle fingers had in great part disappeared, only conical stumps composed of the first and a small portion of the proximal end of the second phalanx remaining. The ring and little fingers were fully flexed, fixed, thin, and tapering, with commencing ulceration on the extensor surfaces of the terminal joints. Ulceration was in progress on the thumb, but had as yet only destroyed the pulp and a small portion of the terminal phalanx, the nail being thickened and curved over the end. The skin of the whole hand was thin and shiny, but over the fingers and thumbs it was of a purplish color, except at the very extremities, where it was tightly stretched and of a pale color and wax-like appearance. Over all of the fingers and the greater part of the thumb, the skin was firmly fixed to the subjacent structures and was also somewhat translucent, as if that which gives opacity and dulness to the natural skin had in great part disappeared. The thenar and hypothenar regions were hollowed from extreme wasting of their respective muscles, and the intervals between the metacarpal bones on the dorsal aspect, normally occupied by the interossei, were also hollowed, so that the outlines of the several bones were very distinct. Owing to the changes that had occurred in the fingers, their movements were either partially or completely interfered with, but there was limited flexion and extension at the wrist, as well as slight flexion, extension, and adduction of the thumb. Sensation was defective over the whole hand, but was nowhere completely absent. On the lower and inner part of the arm, just above the inner condyle of the humerus, was a linear, oblique scar, from two to three inches in length, which was not deeply fixed. Into the scar the brachial artery could be traced, but below it could not be felt. On the outer side of the artery, at the upper extremity of the scar, was a small, rounded or ovoid very tender lump, which was presumed to be the swollen central extremity of the divided median nerve, displaced somewhat from its natural position. The man desired to have the hand removed on account of the pain and the recurring ulceration, and the operation was accordingly performed. Upon dissection of the removed part the median nerve appeared as a whitish, firm cord at the wrist, measuring one-sixth of an inch in diameter, surrounded by an excess of fat and wanting in the glistening appearance of a normal nerve. Upon microscopic examination it was found to be completely transformed into bundles which corresponded with the original nerve-bundles, but consisted simply of wavy fibrous connective tissue. There were, however, no traces of medullated or non-medullated nerve-fibers to be seen. The change consisted simply in a substitution of the nerve-fibers and bundles by connective-tissue fibers and bundles, without much, if any, diminution in size. The ulnar nerve was also of nearly normal size, but tough in structure and also surrounded by much fat, having lost its smooth, glistening appearance. Microscopically, the perineurium and endoneurium were found to be increased, dense, and fibrous, with nerve-fibers in various stages of atrophy, many having altogether disappeared. Most of the fibers had partially lost their medulla, and, owing to the increase of fibrous connective tissue, they were more widely separated than normal. The appearances resembled those found in chronic neuritis. The remaining soft parts were greatly atrophied and in parts replaced by fibrous tissue, the changes being more marked in the distribution of the median nerve than in that of the ulnar.

Hydrocephalic Fetus; Rupture of the Uterus; Removal; Recovery.—Fetherston (*Australian Medical Journal*, vol. xv, No. 12, p. 610) has reported the case of a multipara, thirty-five years old, in which labor set in at term, with weak pains, which lasted four days and then ceased for two days, when she was suddenly seized with severe pain in the left side of the lower portion of the abdomen. Profuse bleeding from the vagina took place, and the woman quickly went into collapse. On vaginal examination a tear was found on the posterior surface of the uterus, connecting with the vagina slightly above the posterior vaginal junction, and extending along the left side of the uterus higher than could be reached. The peritoneum was not torn posteriorly. The os was fully dilated, soft, and flabby, and on the left side the cervix was torn into the uterine wound. The left lateral fornix of the vagina was also torn along its whole length toward the pelvic wall. The membranes were ruptured, and the placenta lay in the opening in the side of the uterus. A hydrocephalic head was found presenting. The hemorrhage being profuse the head was perforated, but could not be delivered without version. The placenta had passed through the rent in the uterus into the abdominal cavity, and some loops of intestine came into the vagina behind the uterus. Slight traction sufficed to deliver the umbilical cord, with the membranes attached. The intestines were pushed back, and pressure kept up upon the fundus to control the hemorrhage. As the patient appeared to be dying from loss of blood, it was decided to open the abdominal cavity. When the accumulated extravasation had been removed it was found that the uterus was torn along the whole length of the left side, from the vagina to about an inch above the opening of the left oviduct. The edges of the tear gaped apart about two inches, and were not bleed-

ing at all. The peritoneum of the posterior wall of the broad ligament was torn from where it was reflected on to the uterus, and out along the floor of the pelvis almost to the pelvic wall. At the outer edge of the tear a large vein was bleeding, and this was controlled by a silk ligature. The pelvic and abdominal cavities were irrigated with hot water. The peritoneum of the left broad ligament was quite black in places, and appeared as if it had been bruised by the passage of the fetal head. The bloodvessels going to the right side of the uterus were ligated; then the body of the uterus was tied in five places with strong silk, and the fundus was removed. All ragged pieces of the torn peritoneum were removed, and the edges brought together with fine silk. The pelvic and abdominal cavities were now thoroughly cleansed, and the stump of the uterus sutured into the lower angle of the abdominal wound, and the abdomen closed with silk sutures. The operation occupied altogether an hour and a half. The patient had for some time been pulseless and cold, in spite of subcutaneous injections of ether, bandaging the limbs, and hot packing. She was put to bed, and received, among other things, ten ounces of hot coffee hourly by the bowel for a few hours. In the course of two hours she showed some signs of rallying, and thereafter gradually emerged from her condition of shock. For the first two days after the operation there was a slight oozing of blood from the vagina. On the fifth day the temperature began to rise and the pulse to become accelerated, and pain in the left lumbar region was complained of. A day later a hard, fluctuating tumor as large as an egg was felt behind the large intestine and below the lower edge of the left kidney. This tumor increased to the size of a man's fist, and on the tenth day exploratory puncture disclosed the presence of nasty, black, offensive pus. The cavity was opened and drained. Recovery was thereafter uninterrupted.

Inferior Maxillary Palsy with Loss of Taste. — Ziehl (*Arch. f. path. Anatomie u. Physiologie u. f. klin. Med.*, B. cxxx, H. 3; *Centralbl. f. d. med. Wissensch.*, 1894, No. 5, p. 95) has reported the case of a man, fifty years old, who, following exposure to cold, experienced a sense of twitching and numbness upon the right side of the face. On investigation it was found that sensibility of all forms was impaired upon the chin, teeth, temple, and tongue in the distribution of the right inferior maxillary nerve, with paralysis of the muscles of mastication upon the right side, and loss of electric irritability and atrophy of the temporal muscle. The sense of taste was also impaired upon the anterior portion of the right half of the tongue, although preserved upon the posterior half and upon the left side. In the course of two months gustatory and tactile sensibility had returned, but even after the lapse of a year the temporal muscle was paralyzed and atrophied.

THERAPEUTIC NOTES.

Alpha Naphthol in Typhoid Fever.—Maximowicz (*Wien. med. Pr.*, No. 10) has employed α-naphthol with success in the treatment of typhoid fever. He maintains that α-naphthol is a more active bactericide and a less toxic agent than β-naphthol. Doses of from 7.5 to 15 grains were administered three or four times daily. Under this treatment the morning remissions were prolonged, the tongue became clean, meteorism and the pain in the right iliac fossa subsided and finally disappeared entirely, and the duration of the attack was shortened. The administration was maintained until the temperature had been normal for three or four days. The following formula was found useful:

℞.—α-Naphthol. . . . . ʒijss–ʒiv.
Bismuthi salicylatis . . . ʒjss.
Pulvis cinnamomi vel
Quininæ hydrobromatis . . ʒj.—M.
Ft. pulv. no. xx.
S.—One from four to six times daily.

In case of pronounced meteorism with severe abdominal pain the following formulæ may be used:

℞.—α-Naphthol. . . . . ʒijss.
Bismuthi salicylatis . . . ʒjss.
Pulvis rhei . . . . . ʒj.
Ext. belladonnæ . . . gr. iij.—M.
Ft. pulv. no. xx.
S.—One from four to six times daily.
Or—
℞.—α-Naphthol. . . . . ʒijss.
Codeinæ . . . . . gr. iij.
Pulvis rhei . . . . . ʒss.
Pulvis cinnamomi cort. . . . ʒj.—M.
Ft. pulv. no. xx.
S.—One from four to six times daily.

Sodium Benzoate. — Liegois (*Deutsche medicinische Wochenschr.*, No. 10) emphasizes the value of sodium benzoate in large doses in the treatment of inflammatory affections of the pharynx. Under this mode of treatment pain and difficulty in swallowing subsided in the course of a few days. Children were given a total dosage of 75 grains daily; adults received from 150 to 225 grains. The drug proved equally efficacious in the treatment of laryngitis and bronchitis, while it failed entirely in diphtheria, both applied topically and administered internally. In combination with tannic acid the drug was found to be useful in the treatment of chronic nephritis:

℞.—Sodii benzoatis } . . . āā gr. lxxv.
Acidi tannici }
Ext. gentianæ . . q. s. ut ft. pil. no. c.
S.—Two pills thrice daily.

Given in small doses in cases of uric-acid formation, sodium benzoate converts the insoluble urates into hippuric acid, and this is readily eliminated by the urine. Sodium benzoate is considered an excellent cholagogue, and may be given in the following combination:

℞.—Sodii benzoatis }
Sodii salicylatis } . . . āā ʒjss
Pulv. rhei radicis }
Pulv. nucis vomicæ . . . . ʒss.—M.
Ft. pil. no. xx.
S.—One pill twice daily.

For Dysentery.—

℞.—α-Naphthol. . . . . gr. xv–lx.
Olei ricini . . . . . ʒiij.—M.
S.—From a teaspoonful to a tablespoonful thrice daily.
Maximowicz.

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POPULAR BEVERAGES AND THE PUBLIC HEALTH.

WHATEVER else they do or abstain from doing, Americans drink. With a by no means limited class of the community, "What will you take?" is a salutation almost as common as "How do you do?" Drinks—either vulgar and cheap or imported and expensive, according to the tastes, social standing, frugality or extravagance, of the drinkers—are more common in every community than "leaves in Vallombrosa." Almost anything that can be poured from a cut-glass decanter, or a bottle that wears a label, is periodically and unquestioningly swallowed, regardless alike of its origin, nature, cost, or effects. In many cases even its taste is of little or no consequence, the most nauseous and acrid being imbibed without grimace, and with as little external sign of emotion as the most palatable. So thoroughly is this idiotic drinking-habit engrafted on the nation, and not only this nation, but on all "civilized" communities, and to such an extent has the traffic in artificial beverages become a leading factor in the commerce of the country, that the General Government long since found it to be both necessary and expedient to semi-legalize the business by levying a tax on all fermented and on distilled or "spirituous" beverages. Every municipality also derives a large proportion of its annual revenues from licensing and "regulating" the retail traffic in this class of products.

But there are a thousand and one beverages, in even more universal and yet quite unquestioned use, of which the General Government, the Commonwealth, and the municipal authorities take no cognizance, and concerning which medical men, sanitary philosophers, and political economists make little note; but which, nevertheless, have an important bearing, in their direct or indirect influence, on the public health. This group includes the alleged, but by no means always genuine, products—domestic and imported, natural and fabricated—of the countless springs, whose tastefully-bottled and lavishly-certified waters invariably cure something, and usually help everything, and also all that unenumerated family of still, or sparkling, natural or concocted beverages, saline, "mineral," alkaline, and "soda" waters, the very names of which would fill a respectable volume, including the almost endless list of aërated claimants, from ginger ale to "Thea-nectar" and orange phosphate—the prevailing characteristic of all being that of fizzling trashiness and palpable unwholesomeness.

That our national stigma, *dyspepsia*, and the increasing prevalence of urinary and kidney diseases are largely attributable to this irrational but universal habit of indiscriminate drinking, is too evident to admit of serious question. In this connection it is noteworthy that mortuary reports are beginning to ascribe certain lesions to "a too free use of mineral waters." This bibacity has become a national dissipation. Custom, artificial habit, or ephemeral fashion, and not the sense of thirst or the needs of the body, determine the character, frequency, and extent of the libations. The morbid palate is permitted to become sole dictator, and the deluged and outraged stomach is left to wrestle with the inevitable consequences as best it can.

The increasing outcry against the widespread abuse of alcoholic liquors falls far short of a thoroughly comprehensive temperance movement, as intemperance, using the term in its broadest significance, covers a multitude of sensual sins not in the least degree related to alcoholic indulgence. A majority of the race eat, drink, sleep, work, worry, and even recreate intemperately. They transform the very means of attaining, retaining, and regain-

ing health into insidious sources of deterioration. They prostitute systems of physical culture and bodily development, making them fruitful sources of bodily deformity, mental wreckage, and premature decay. They take work, travel, social life, politics, and even religion in spasmodic and periodic doses; and, as to recreation, they ruin their overstrained muscular systems in frantic contests at foot-ball, rowing, wrestling, or at the bat. They have never comprehended the meaning of the word moderation; and from the time they were coaxed to sleep in their cradles, perhaps by means of soothing syrup and the monotonous lullabies of a hired nurse, they have never known an hour of genuine and restful repose. They consider the hours grudgingly devoted to sleep as so much lost time. If it were a physical possibility they would gladly forego this indispensable function. As it is, they indulge and endure as little of it as possible, and this at unseemly hours, and in spasmodic snatches.

Of all human frailties, crimes against Nature are least excusable. Wilful tampering with physical laws is a crime against Nature and therefore an unpardonable sin—unpardonable in the sense that no individual can hope to escape its consequences. *The body that sinneth, it shall suffer.* No law of vicarious atonement for physical sinners has ever been, or ever will be promulgated. Nor is this fact in any sense negatived by the discovory of anesthetics, cocain, and the other insidious pain-obtunders. Every artificial mitigation unquestionably costs an equivalent in vital reaction.

Of all the wilful lapses from an ideal and rational standard of daily living mentioned, the drinking-habit may be singled out as the one most destructive to health and human happiness, for the reason that it is so universal as to pass without comment. Even the ubiquitous ice-water tank, considered indispensable in every dining-room, railway-car, station, office, hall, and restaurant, is answerable for a mountain of mischief to the digestive organs of the present generation.

In their zeal the temperance people train all their artillery against the "demon of the still"; the pulpit too often handles the subject from a classically conservative standpoint, while the medical profession absolves itself through occasional discussions and dissertations on the necessity or futility, as the case may be, of the use of alcoholics in fevers and wasting diseases, and by suffering their names to be appended to popular advertisements of shotgun formulas and certain conglomerations of saline, mineral, earthy, and organic constituents, as disclosed by the analyses-to-order "pharmaceutical chemist" whose name was never heard of outside the bottling-room of "The Paralyzer Mineral Spring Company," from which he receives his salary.

The list of table-waters, many of them ostensibly, and some of them actually, transported all the way from the Old Country, is almost endless; and of aërated beverages, good, bad, and indifferent, there is an astonishing list. A degenerate drug-trade has stooped to the traffic; the waters are on the hotel and restaurant tables; the saloon relies on them for one-half its profits, and even the corner grocery crowds its shelves and cellars with cases of them. Every year new claimants appear, as old favorites are dropped. Millions of money and whole armies of men are absorbed in the traffic; and the press of the country—secular, religious, and, to some extent, medical—would be materially crippled by a withdrawal of the advertising patronage growing out of it.

It is a fact that, if the direct and indirect business connected with the conducting, controlling, and supplying the trade dealing in beverages of all kinds, could be suddenly withdrawn from the avenues of commerce, the whole machinery of daily business would be dislocated, and the streets would take on the appearance of a perpetual holiday. Omitting all mention of the myriads of mere dispensers of liquid "refreshments," such withdrawal would throw out of employment, in this country alone, several millions of operatives and artisans, including coopers, carpenters, glass blowers, hardware merchants, harness-makers, manufacturers of apparatus, engines, and machinery, plumbers, and wheelwrights, not to mention grain and hop raisers, horse-breeders, and the miscellaneous array of middlemen, who necessarily stand between all these avocations and the marketing of their numberless products. It would require the compass of a goodly volume to make an adequate statement of the mere commercial interests involved; whereas the sanitary aspects of the subject have as yet been but superficially studied by the profession. Furthermore, medical men are to some extent responsible for the present status of the question. Many of them are regular patrons of the traffic, and many are direct abettors and apologists as regards the habit itself.

FERRATIN.

Schmiedeberg (*Archiv f. exper. Path. u. Pharm.*, B. xxxiii, S. 101) points out that when albuminates are formed by dissolving albumin in alkalies and such solutions are rendered acid, an albuminous substance is precipitated. This substance has acid properties, as is shown by its combination with bases. If a neutral solution of potassium albuminate be treated with ferrous salts a precipitate of the albuminate of iron is formed. This precipitate is soluble in alkalies, forming double salts. Ammonium sulphid added to one of these solutions produces an intense and instantaneous blackening, on account of the formation of the sulphid of iron, just as happens on the addition of sulphids to the inorganic salts of iron. However, if an alkaline solution of iron albuminate be boiled for a short time or be kept at a moderately high temperature for a longer time, it becomes brown and after this blackens only very slowly on the addition of ammonium sulphid. The last-mentioned compound is not an iron albuminate but a distinctive iron-containing albuminic acid, and may be designated as ferri-albuminic acid. Ammonium sulphid slowly decomposes ferri-albuminic acid and forms the sulphid of iron.

Ferri-albuminic acids containing varying amounts of iron may be prepared. Those most easily made and most readily soluble in alkalies contain from 4 to 8 per cent. of iron. The preparation of a ferri-albuminic acid with a constant iron-content has not been accomplished up to the present time.

With unchanged albumin iron forms compounds similar to those obtained with albuminic acid. These are known as ferri-albumins and are easily made by the prolonged warming of egg-albumin and iron in ammoniacal solution at a temperature below that at which albumin is coagulated.

Schmiedeberg has succeeded in obtaining a ferri-albumin from the livers of hogs by the following process: The livers are finely chopped, then mixed with three or four volumes of water, gradually heated to the boiling-point and maintained at this temperature for a few minutes. The filtrate forms a yellow, clear fluid, which on the addition of a few drops of a solution of tartaric acid yields a flocculent precipitate which is washed first by decantation and then on a filter. This precipitate is a ferri-albumin which forms on drying a brown mass, containing an average of 6 per cent. of iron, and dissolving in alkalies to a clear brown solution. This ferri-albumin is named ferratin by Schmiedeberg, and he believes that it forms the reserve iron which is stored in the liver to be drawn upon as the needs of the body may indicate. This substance is readily absorbed from the intestines, and as it possesses no corrosive action it may be given hypodermatically.

Schmiedeberg believes that he has thus obtained the ideal therapeutic preparation of iron. However, the separation of this substance from the liver is too expensive and the yield too small to admit of its introduction to the profession as a pharmaceutic preparation. Schmiedeberg states that a certain firm of manufacturing pharmacists has succeeded after some years of experimentation in making ferratin artificially, and that the substance which this firm offers to the profession is in every respect as good for therapeutic purposes as that obtained from the liver. He fails to tell us, strange to say, how this artificial compound is made, and evidently there is an attempt in the article to help the trade of an enterprising drug-house. The advertising by a member of the medical profession of a preparation the manufacture of which is accomplished by secret processes is not regarded with favor in this country. This research by Schmiedeberg may prove to be of great medicinal value, but the manner in which he has announced his discovery and the success of the firm in the artificial preparation of the compound is open to criticism.

EDITORIAL COMMENTS.

The Surgical Treatment of Perforation from Gastric Ulcer.—Few cases offer more temptation to the adventurous surgeon and in few, unfortunately, have his endeavors been rewarded with less success than those of rupture of a gastric ulcer into the peritoneal cavity. The affair seems, on the face of it, so absolutely simple; the patient may be in perfect health, with the exception of this little perforation and the resulting extravasation of the contents of the stomach into the peritoneum, and, moreover, in the majority of cases in which the rupture has been sudden and the symptoms typical, the perforation has been in accessible regions—on the anterior wall of the stomach—and yet, so far, few attempts to sew up the opening seem to have been attended with success. Great interest, therefore, attached to the case reported by Mr. Morse, of Norwich, England, in which a young woman having symptoms of gastric ulcer was suddenly seized with symptoms of perforation, and was treated by him successfully by means of celiotomy and suture of stomach. Abdominal section was performed within five hours of the accident; the contents of the stomach were found in the peritoneal cavity; the viscus was withdrawn and a perforation

found; the stomach was thoroughly washed out and the wound united. No food was given by the mouth for sixty hours, and in three weeks the patient was well. The points of importance conducing to the success of this case would seem to be (*a*) early operation, before irrevocable septic mischief has arisen through absorption from the peritoneal surface; (*b*) washing out the stomach as a preliminary to introducing the sutures; this was managed by introducing a large canula through the perforation, and alternately filling this viscus with water and emptying it until the fluid came away clear; (*c*) drawing the stomach out through the wound, so as to perform the washing and suturing with facility; and (*d*), most important of all, the very great care taken to thoroughly wash out the peritoneum. The maneuver adopted by Mr. Morse, with this object, will probably be useful for other purposes also. Instead of merely passing a tube to the various regions of the abdomen, leaving the return-water to wash out the fragments, two large tubes were passed side by side to every part of the cavity, and the flushing was continued at each spot until the return-fluid was clear; by this arrangement the extravasated stomach-contents were washed out through the tube, instead of drifting in the stream from one part of the abdomen to another. It is to be hoped that other surgeons will be able to obtain like success in the treatment of this otherwise very fatal accident. On a very different footing stands the proposal to treat perforation of the bowel in enteric fever, as was shown by the discussion at the Medical Society of London on March 9th. The patient is already seriously ill, and, although the accident, of course, happens suddenly, the signs of its occurrence are often by no means typical. The stupor of the patient leads to the symptoms being more or less masked, the moment of onset may not be discoverable, the pain may not be severe, and the patient may only seem to pass from a bad into a worse condition. Moreover, the ulcers are generally multiple and the intestine rotten, so that the stitches may have to be inserted in unhealthy tissues, possibly even in the bases of other ulcers! A certain number of such cases also recover under medical treatment. The operation, then, would seem a much less hopeful one than that for perforation of gastric ulcer.

The Pathology of Paralysis Agitans.—The belief seems to be gaining ground that paralysis agitans is but a manifestation of premature senility, the result of changes affecting the nervous system as a part of a widely distributed degeneration, and the pathologic evidence tends to support this view. An interesting contribution to this subject has recently been made by Ketscher (*Zeitschr. f. Heilk.*, Bd. xii, S. 445; *Centralbl. f. allg. Pathologie u. pathol. Anatomie*, Bd. v, No. 4, S. 173), based upon observations made in the laboratory of Chiari at Prague. The tissues from three cases were carefully studied, the material being from subjects between sixty-eight and seventy-six years old. The changes found, and which corresponded with those found by previous investigators, consisted in a varying degree of degeneration and atrophy of the specific nervous elements, the ganglion-cells and the nerve-fibers, as well as of the muscles. There was also hyperplastic increase of interstitial tissue, in brain as well as in nerve, and in muscle, and this was particularly marked in the neuroglia of the posterior columns adjacent to the posterior median fissure. In this situation, in the ependyma of the lateral ventricles, and at the periphery of the cord generally, there were noteworthy accumulations of copora amylacea. There were also present thickening of the walls of the vessels, with dilatation of the perivascular and pericellular lymph-spaces and obliteration of the central canal of the spinal cord by the surrounding increase of neuroglia, together with hyperplasia of the epithelium of the lining membrane, giving rise in places to dilatation of the canal. For comparative purposes studies were made of the spinal cord, peripheral nerves and muscles, obtained from ten persons that had died of other conditions, between the ages of fifty-seven and seventy-six years. In all of these changes were found that differed only in degree from those found in the cases of paralysis agitans. The legitimate conclusions from these observations is that paralysis agitans is but the expression in the nervous system of a premature senile degeneration. Etiologically it may be conceived that as a result of diminished functional activity there occurs defective elimination of matters that, retained, give rise to irritation and bring about degeneration in the nervous system, as well as in the vascular system and in the viscera, and the progression of which leads finally to the extinction of life.

The Falkenstein Treatment of Pulmonary Tuberculosis.—We hear a good deal about the open-air treatment of pulmonary tuberculosis, and the attempts to raise this method into a "system" as practised at Falkenstein in the Taunus Mountains in Germany are worthy of all praise, so far as they demonstrate to the world at large, which is not very believing in such matters, that tuberculous patients are all the better for open windows. At the establishment at Falkenstein, in addition to good food, cleanliness, perfect sanitation, and most careful measures to prevent the diffusion of tuberculous dust, a definite attempt is made to enable the patients to pass their whole time in the open air. Plenty of rugs and clothing are allowed, and the rooms and corridors are plentifully supplied with heating-apparatus, but, except when actually dressing and undressing, the windows of the bedrooms must be open day and night, in all weathers and in all seasons, and during the day the patients dwell in corridors or summer-houses or altogether out of doors. The results are said to be satisfactory. One point is of much interest. The number of patients whom it is found necessary to confine to their rooms hardly varies in the different seasons, being 8.5 per cent. in the summer and 9.33 per cent. in the winter months. It seems clear, however, that a treatment of this sort, if useful at a health-resort, should be equally applicable to home life and that the lessons taught by it are as important to the healthy as to the sick. If these delicate *poitrinaires* can bear open windows and fresh air, so can people in ordinary health, and there can be no doubt that people would be better in every way if they very much lessened the difference between indoors and outdoors as regards both clothing and fresh air. The lesson to be learned, however, from the Falkenstein treatment is that a certain acclimatization is required, and that what is begun must be persisted in; a man who sleeps with open win-

dows one week and shuts them the next is sure to suffer from disorders of the air-passages.

How to Advertise and Seem Not to Advertise—how to break with the spirit of the law while keeping the letter; how to advertise to the public and make the profession believe one is not advertising—all this is an old problem and an old story. But it is the ever-new problem of the born quack who finds himself among men whose instinctive sense of right makes them non-advertisers both in letter and spirit. The only advantage to be gained by those with the secret itch of self-advertisement is only to be gained while the bulk of the profession will not advertise. The day that the majority of one's fellows enter into competitive advertising, that day the profits sink to zero, or come only to those with the most reckless brazenness and the most unprincipled commercial shrewdness. When but a single horn is blown, the most "delicate and proper" blower is easily heard; but when everyone blows his own instrument, then the toughest lungs and the worst horn drown out the others.

This little homily is suggested by the perusal of an editorial in the *Alienist and Neurologist* for January in which it is contended that the Code itself contains, or should contain, adequate provision for the sly fellows, thus to take advantage of their colleagues by placarding on signs, and by any sort of public announcement, the facts as to their graduation, their specialty, capacity, etc. Especially should the expert in nervous diseases be permitted to "let the public know, in a delicate and proper way," about himself and his expertness. This parenthetic "delicate and proper way" is the acme of humoresque cunning. To do an indelicate and improper thing in a "delicate and proper way" is, to a certain class of minds, the very culmination of ethics.

> "It was all very well to dissemble your love,
> But why did you kick me down stairs?"

Personalities in the Journal of the American Medical Association.—The announcement in the *Journal of the American Medical Association* for March 31st, that personalities will not [hereafter] be printed, is to be welcomed, but this tardy confession and repentance do not relieve the editor of that journal from responsibility for having published two personal attacks on the same person—and, that, a member who ventured in respectful, if perspicuous, language to criticise its course. Nor are the trustees relieved from the duty of officially repudiating the editorial action in accepting a letter that a well-conducted and self-respecting journal should have consigned, without question, to the waste-basket.

CORRESPONDENCE.

THE MORTALITY OF THE NEGRO.

To the Editor of The Medical News,

Sir: In The Medical News of February 3, 1894 (vol. lxiv, No. 5), R. M. Cunningham, of Alabama, in an article entitled "Morbidity and Mortality of Negro Convicts," draws attention to the lessened vitality of the negro in prison, and endeavors to show that the greater death-rate is due to anatomic and physiologic characteristics that render the negro particularly liable to diseases of the lungs. Subjected to the same environment the adult negro, it is well proven, is less resistant to disease than the adult white.

Northern prisons, in which no distinctions are made on account of color, show a death-rate from two to three times as great for the black man as for the white. In the Eastern Penitentiary, in proportion to their number, the black furnishes three times as many deaths as the white population. In other prisons similar results are shown.

As Dr. Cunningham has proved for Georgia prisons, so it can be shown for other institutions that the negro convict dies more often of tuberculosis than the white convict, though the percentage for the latter, in prison, is usually high. In the Eastern Penitentiary, out of 100,000 white adults 760 will die of pulmonary tuberculosis, and out of 100,000 negroes 3000 will succumb annually to this malady. Thus four times as many colored adults in confinement die of this disease as whites.

If we compare the high mortality of convicts with the mortality in the cities and towns we shall find that, just as in prisons, the negro has a much higher death-rate than the white. The census for 1890 furnishes us with the following data: The death-rate per 100,000 according to race was, for Richmond, Va.: white, 22.65; colored, 40.80. Lynchburg, Va.: white, 13.53; colored, 44.16. Atlanta, Ga.: white, 18.28; colored, 33.57. Birmingham, Ala.: white, 35.15; colored, 53.24. Philadelphia: white, 20.76; colored, 26. Baltimore, white, 20.41; colored, 32. Again, when we analyze the figures we find, according to Dr. Billings, that while in Baltimore 375 white adults out of 100,000 die of tuberculosis, 575 colored adults die of the same disease. In the District of Columbia the figures are 330 for the white and 690 for the colored.

But the most significant fact is the high death-rate among colored children under five years of age. Thus for Baltimore it is 88.22 in 1000 for the white and 197.62 in 1000 for the negro; in Charleston, S. C., 92.34 white, 227.79 colored; in Richmond, Va., 75.27 white, 222.58 colored. If we can explain this high infant mortality it is possible, it seems to me, to explain the higher adult mortality.

The negro, as is well known, usually occupies the poorest quarters of a town or city. The "shanties" of the colored man constituted the slums before the advent of Italian and Russian emigration. With miserable homes are combined ignorance and poverty—a trio responsible for a multitude of diseases, and among them the most fatal ones.

In the early years are sown the seeds of tuberculosis, which require but the confinement of a prison to mature and develop. Glands that were affected in early life enlarge and break down under confinement, and this is but an instance of the latency of the bacillus tuberculosis. The early infection requires some exciting cause, be it a prison, a disease outside of prison, or fatiguing work—whatever depresses the general bodily vigor—and it is fanned into action and lights up into an acute process. If this early environment is responsible for the greater mortality of the negro, as compared with the white, then we should expect to find an increased mor-

tality among the whites who are subject to the same environment. Unfortunately we have no statistics in medicine that take into account social distinctions. Our mortality-statistics are based on political boundaries, and often the millionaire lives in the same district as the pauper. Even sanitary divisions include classes differing widely from each other in home-life and material welfare.

An attempt has been made by the New York Board of Health to collect mortality-rates for various tenement districts. The few figures I have been able to obtain indicate a similar condition among the Italians as among the negro; a mortality-rate among their children of 150 per 1000, while the average death-rate among children under five years of age for the city generally is 93 per 1000.

Where there is overcrowding, inefficient housing, poverty, and ignorance, the death-rate among infants must be high, and if disease is the cause of this death-rate, then tuberculosis pulmonalis must be engendered in many of those who survive the early struggle, remaining in them, ready to show itself when for some reason or other, the vital powers are depressed.

Make the conditions favorable for the negro from childhood up, and then first can we say that he is less capable of withstanding disease than the white man.

The criminal nature of the negro must be viewed in the same light. At present he does furnish a much larger number of convicts than his proportion in the population entitles him to. The negro forms 2.09 per cent. of the population of Pennsylvania, and furnishes 10 per cent. of those committed for trial, and 16 per cent of all convictions.

In Georgia, the colored population of the prisons is 85 per cent. of the whole, while outside of prison it is but 47 per cent. In Mississippi 60 per cent. of the population generally are colored, and 82 per cent. of the convicts belong to the black race.

Can we discover some anatomic or physiologic something that will explain this characteristic?

In the South, where lynch-law is most commonly dealt out to the negro, we might attempt to ascribe this greater criminality to lack of fair treatment, and prejudice on the part of the white man; but in the North we are supposed to be exempt from this accusation.

In criminal statistics, as in medical statistics, we do not compare classes. The man who is uninfluential, who cannot afford good counsel, who cannot afford to prolong his defence, is more often convicted than the man who is able to obtain these things, irrespective of race-prejudice, and consequently our prisons are crowded with the poor and uninfluential. If the negro is compared with the white man according to social standing, the criminal tendencies may be found to be no greater than the differences in education will explain.

To summarize: I would refer the differences commonly found in the death-rates of the colored race, as compared with the white, to differences in the environment, to the social differences which surround the children, and not to any physical distinctions; at least, until this sociologic factor is studied and taken into account, the so-called hereditary and racial characteristics as witnessed in the adult are liable to lead to wrong conclusions.

We must compare individuals of the same class, in order to obtain proper statistics for medicine as well as for sociology.

M. V. BALL,
Physician to the State Penitentiary for the Eastern District of Pa.
PHILADELPHIA.

EPILEPSY OR HYSTERIA?

To the Editor of THE MEDICAL NEWS,

SIR: In the issue of THE MEDICAL NEWS of March 3, 1894, Dr. Howard F. Hansell reports two very interesting cases in which attacks of unconsciousness, resembling epilepsy, were apparently caused by insufficiency of ocular muscles, and were promptly terminated by tenotomy.

Dr. Hansell will surely agree with me in saying that such reports will mislead if they confuse epilepsy with hysteria; for it is a matter of common observation that hysteric attacks are precipitated by the most diverse causes, and often prevented, even for long periods, by any therapeutic measure that sufficiently impresses the mind.

Now, I submit that the diagnosis of epilepsy is not justified by anything recorded of either of these patients. In both cases there is a significant absence of all the unequivocal symptoms of epilepsy. In the first case the eructations of gas following each attack, and the fact that the first seizure occurred under the influence of powerful emotion, constitute strong presumptive evidence of hysteria.

In the second case "the close connection of the periods of unconsciousness with the use of the eyes at the near-point" makes the hysteric nature of the attacks almost certain. It is only in the rarest cases that emotion or painful effort has any causal relation to genuine epilepsy, but it is precisely these things that most commonly precipitate hysteric seizures. If the cases in question are examples of hysteria, it can hardly be maintained that ocular disturbance caused the disease; it was more probably one of the effects.

Yours, very truly,

HOWELL T. PERSHING.
DENVER.

To the Editor of THE MEDICAL NEWS,

SIR: For the benefit of Dr. Pershing and others who may have been inadvertently misled by my use of the word "epilepsy," which twice appears in the notes on Case I, permit me a brief explanation.

Miss R. complained to Dr. McWilliams of epileptic attacks, but neither Dr. McWilliams nor I had seen her during an attack, and therefore had no opportunity to determine their true nature. In describing her symptoms I employed her own language as nearly as possible, and purposely omitted comment. In the case of Miss O. the word "epilepsy" is not mentioned, and it is hardly possible that the symptoms, as detailed, could be construed to indicate that a diagnosis of that disease had been made. The title of the paper was "Two Cases of Functional Nervous Disease, etc.," and under that heading they can properly be discussed. My main object in publishing the report was to show, by means of the reproduction of the tintypes, the immediate and marked change in the facial expression, and not to state or

imply that two cases of true epilepsy had been cured by tenotomy of the ocular muscles.

Very truly yours,

HOWARD F. HANSELL.

PHILADELPHIA.

MALARIAL INSANITY.

To the Editor of THE MEDICAL NEWS,

SIR: The article of Dr. Edward Anderson, of Rockville, Md., in your issue for March 10th, page 270, recalls to mind several cases that occurred in my practice while located at Boyd's, Md. I was called, July 21, 1882, to see a woman, aged about fifty years, living in the neighborhood of Germantown, situated about eight miles west of Rockville, Md. This patient had been treated (tentatively) for two weeks by another physician. I found her raving, and wild with maniacal excitement, with startled, staring expression of the eyes and quite indifferent as to her surroundings, requiring a number of attendants to restrain and keep her in bed. The house which she occupied stood on a hillside bordering a long meadow or lowlands with an adjacent boggy region. She had been taking quinin, gr. ij, three times a day, with no apparent benefit. I at once put her on quinin, gr. viij, every four hours. This in twenty-four hours calmed the excited condition, and after six days' continuation of the treatment she became convalescent. There was no recurrence of the trouble in the next three years, during which time I had opportunity to observe her.

Another case occurred the following year in the same neighborhood, the patient being a colored man about twenty-four years of age. When I arrived at the cabin a dozen or more stalwart colored men were in attendance, endeavoring to confine him to a cot; he was very wild, and it was with difficulty that he was constrained. During my examination of the case I received an indirect unintentional blow from his arm which I felt quite keenly. Good generous doses of quinin in the course of forty-eight hours changed him into a quiet, well-disposed man. In the family history of neither of these cases was there any trace of mental disturbance, but the malarial poison undoubtedly produced the profound mental effect.

Still another case, with the same cause, but with a different effect, is the following:

I was called, in January, 1883, to see a colored woman, living in a cabin on the banks of a creek, and found her suffering with a severe attack of sciatica from which anodynes of any kind gave no relief, not even large doses of morphin hypodermatically. There was no fever, or symptoms of any kind indicating malaria. After futile attempts for several days I had fifteen grains of quinin administered, which resulted in amelioration of the pain. After this quinin was continued for some time, with no return of the sciatica.

Such cases show not only the peculiar course which disease takes, but that simple causes may produce the most complicated state of affairs.

J. J. COFFMAN.

SCOTLAND, PA.

A BREAD FOR DIABETICS.

To the Editor of THE MEDICAL NEWS,

SIR: The following formula for the preparation of a good and wholesome bread for diabetics is one that I have used for the past five years with marked satisfaction. Besides being a cheap and palatable bread, it has the advantage of digesting well. Mix one pound of gluten flour with one and a half pounds of "fine shorts." Add four cups of warm water and one yeast-cake. Make a thin batter, salt to taste, and permit the whole to rise over night. Then add a sufficient quantity of "fine shorts" to make the batter stiff, working it up well together for fifteen minutes. Roll and work in a little gluten-flour. Then place the mass behind the oven, and let it rise until cracked and fissured, and the bread is ready for the oven, where it should bake for one hour.

If a whiter bread is desired, more gluten-flour should be added. Yours truly,

GEORGE F. KOEHLER.

DEKUM BLOCK, PORTLAND, OREGON.

FRACTURES OF THE LOWER END OF THE RADIUS, WITH FORWARD DISPLACEMENT OF THE CARPAL FRAGMENT.

To the Editor of THE MEDICAL NEWS,

SIR: I shall be greatly obliged if you will inform your readers by a short note that I am particularly anxious to know of any cases of fracture of the lower end of the radius, with forward displacement of the carpal fragment. Notes of cases, references to published reports, or information of specimens in museums will be of much interest to me. Yours truly,

JOHN B. ROBERTS.

1627 WALNUT STREET, PHILADELPHIA.

NEWS ITEMS.

The Association of American Medical Colleges will hold its fifth annual meeting at San Francisco, Cal., June 6, 1894. Action will be taken at this meeting upon the following amendments, to wit:

Rush Medical College, by unanimous vote, submits the following amendment to Sec. 5, Art. III, of the Constitution: "Providing that students who intend to graduate in 1899, or in subsequent classes, four years of medical study and an attendance upon four annual courses of lectures of not less than six months' duration each will be required. Provided, that graduates of literary colleges who have taken a course of scientific studies, graduates of schools of pharmacy that require three years' study and adequate preliminary education, and graduates of dental colleges requiring two years of study and adequate preliminary education, may be admitted to the second year's work or course of lectures in the college without examination."

The present wording of Sec. 5, Art. III, is as follows: "Candidates for the degree of Doctor of Medicine shall have attended three courses of graded instruction of not less than six months' duration each, in separate years."

At a conference held at Chicago, February 7th, the representatives of the twenty colleges represented were unanimously of the opinion that the present requirements of the entrance examination were not sufficiently definite, and directed that the following amendment to Sec. 1, Art. III, be submitted for consideration at the forthcoming session, to be held June 6th: "Colleges, mem-

bers of this Association, shall require of all matriculates an examination as follows: 1. An English composition in the handwriting of the applicant, of not less than two hundred words, said composition to include construction, punctuation, and spelling. 2. Arithmetic—fundamental rules, common and decimal fractions, and ratio and proportion. 3. Algebra—through quadratics. 4. Physics—elementary, Gage. 5. Latin—an amount equal to one year's study, as indicated in Harkness' Latin Reader."

The present wording of Sec. 1, Art. III, is as follows: "Article III, Section 1. Members of this Association shall require of all matriculates an English composition in the handwriting of the applicant, of not less than two hundred words, an examination by a committee of the faculty, or other lawfully constituted board of examiners, in higher arithmetic, algebra, elementary physics, and Latin prose."

It has been recommended that Sec. 5, Art. III, be amended to read as follows: "Colleges, members of this Association, shall require of all applicants for the degree of M.D. attendance upon three courses of lectures of not less than eight months each, or four courses of six months each, in separate years."

A committee consisting of P. S. Conner, of the Medical College of Ohio; Victor C. Vaughan, of the University of Michigan: Wm. E. Quine, of the College of Physicians and Surgeons of Chicago; N. S. Davis, Jr., of the Chicago Medical College; C. B. Stemen, of the Fort Wayne Medical College, unanimously recommended that the Constitution be amended by the following addition: "Colleges, members of this Association, shall require at least an amount of work in each branch as follows, to wit:

	Hours didactic and recitation.	Hours Laboratory.
Histology and Embryology	50	100
Anatomy	150	300
Physiology and Physiological Chemistry	200	75
Chemistry	125	125
Materia Medica and Therapeutics	125	
Practice	200	
Surgery	200	
Regional and Operative Surgery	50	50
Obstetrics and Gynecology	150	
Ophthalmology and Otology	25	
Mental and Nervous	25	
Dermatology	25	
Bacteriology	25	150
Pathology	50	100
Physical Diagnosis	75	
Pedology	25	
Medical Jurisprudence	15	
Hygiene and State Medicine	50	
Genito-urinary	25	
Orthopedics	25	
Laryngology	25	
Clinical Instruction.		

Mutter Lectureship of the College of Physicians of Philadelphia.—The next course of ten lectures, under the bequest of the late Professor Thomas Dent Mütter, M.D., LL.D., "On Some Point or Points Connected with Surgical Pathology," will be delivered in the winter of 1896–97, before the College of Physicians of Philadelphia. The compensation is $600. The appointment is open to the profession at large. Applications, stating subjects of proposed lectures, must be made before July 1, 1894, to William Hunt, M.D., Chairman of Committee on the Mütter Museum, Northeast corner Thirteenth and Locust Streets, Philadelphia, Pa.

Brown-Sequard, the distinguished French physiologist and *savant*, died at Paris on April 2d. He was born on the island of Mauritius April 8, 1817, and graduated in medicine in 1840. In 1858 he delivered a series of six lectures before the College of Surgeons of London. He was for a time, until 1864, physician to the London Hospital for the Paralyzed and Epileptic. From 1864 to 1869 he occupied the chair of Physiology and Pathology of the Nervous System in Harvard College. From 1869 to 1871 he filled a professorship in the School of Medicine of Paris. In 1873 he removed to New York, but he returned to Paris in 1878, succeeding Claude Bernard in the chair of Experimental Medicine in the College of France.

Séquard made numerous and valuable contributions to medical literature, and will always be admired and esteemed for the originality and ingenuity of his researches.

The Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons for 1894 will be delivered at the New York Academy of Medicine on Wednesday evenings, April 4th, 11th, and 18th, at 8 o'clock, by Professor Russell H. Chittenden, Ph.D., of Yale University. Subject: Digestive Proteolysis. I. General Nature of Proteolytic Enzymes; General Nature of Proteids. II. Proteolysis by Pepsin—hydrochloric acid, with a Consideration of the General Nature of Proteoses and Peptones. III. Proteolysis by Trypsin; Absorption of the Main Products of Proteolysis. Members of the profession are cordially invited to be present.

The Philadelphia Pathological Society will hold its semi-annual conversational meeting on Thursday, April 26, 1894, in the upper hall of the College of Physicians building, Thirteenth and Locust Streets. Dr. Simon Flexner, Associate in Pathology in the Johns Hopkins Medical School, will deliver an address entitled "An Experimental Study of the Nature and Action of Certain So-called Toxalbumins." Members of the medical profession are cordially invited to be present.

A Memorial to Semmelweiss will be unveiled at Buda-Pesth the coming September, on the occasion of the Congress of Hygiene and Demography.

Books and Pamphlets Received.

A Case of Brain Tumor situated in the Motor Region; Autopsy. By Wharton Sinkler, M.D. Reprinted from the International Medical Magazine, 1892.

Medicine as a Career for Educated Men. The Commencement Address at Lafayette College, June 13, 1893. By William W. Keen, M.D., LL.D. Lafayette Press, Easton, Pa.

Clinical History of a Case of Spindle-celled Sarcoma of the Choroid, with a Study of the Microscopic Condition of the Growth. By Charles A. Oliver, A.M., M.D. Reprinted from the University Medical Magazine, 1894.

Mastoiditis. By Cassius D. Westcott, M.D. Reprinted from the Chicago Medical Recorder, 1893.

Post-mortem Technique. By Ludvig Hektoen, M.D. Chicago: The W. T. Keener Co., 1894.

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ORIGINAL ARTICLES.

FURTHER REMARKS ON THE OCCURRENCE OF A FORM OF NON-ALBUMINOUS NEPHRITIS OTHER THAN TYPICAL FIBROID KIDNEY.[1]

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RECENTLY,[2] under the title "The Occurrence of a Form of Chronic Bright's Disease, Other than Typical Fibroid Kidney, Without Albuminuria," I directed attention to a hitherto unrecognized and apparently not uncommon class of cases of chronic nephritis, representing a type clinically distinct from that viewed as interstitial nephritis. Briefly it may be said to be one the clinical symptoms of which place it quite without the boundary of the well-known varieties of the so-called Bright's diseases, such as chronic desquamative nephritis, or the fibroid or granular kidney. I dwelt upon the wide difference clinically between the group of cases I described and that with which these are most likely to be confused—interstitial nephritis, the red, granular, or fibroid kidney. I pointed out that it has long been known that cases of fibroid kidney could occur, especially in the early stages of the malady, without the presence of albumin in the urine, or with albumin existing, if constant, only in traces, or to be found in certain portions of the twenty-four-hour urine.

The occurrence of typical granular kidney without albuminuria, I said, had been first remarked by Wilks, of Guy's Hospital, nearly a half-century ago, but it was Mahomed some three decades later who especially investigated cases of this phase of the disease, describing a considerable number of them in the *Guy's Hospital Reports* for 1879 and 1880–81. I stated that it was doubtful if many of Mahomed's cases, such as I cited, were actually cases of renal disease, though they could be properly included in the category of chronic Bright's disease as Mahomed employed the term. The symptoms of numerous of Mahomed's cases were in the main referable to other organs, and in a minority of those in which a necropsy was obtained the kidneys were stated to be normal.[1]

I also observed that—

"Apart from the doubtful cases of renal disease among those reported by Mahomed, in which albuminuria was absent, there remains a good number in which, with the urine free from albumin, undoubted granular kidney existed. Be that as it may, Mahomed's cases were all in middle or advanced life. There were present decided cardio-vascular changes, such as hypertrophied heart and thickened vessels. These cases were reported especially to show that in the stage of Bright's disease in which epithelial alterations in the tubules were absent—or, if occurring, were but transitory in character—albuminuria was absent, the urine remaining practically normal, and symptoms referable to the kidney, *i.e.*, those of renal inadequacy, were uncommon. Death in these cases, as Mahomed remarks is usual in granular kidney, resulted from failure of other organs, notably the heart."

The class of cases described by Mahomed, and subsequently referred to by Millard,[2] and especially by Purdy,[3] related only to the typical arterio-capillary fibroid kidney so ably portrayed by Sir William Gull:[4] an affection occurring in the degenerative period of life, and part and parcel of a diffused cardio-vascular decay. In this class it is well recognized that with an accompanying polyuria, or with urine, less commonly, perhaps, unaltered as regards amount, the excretion of urinary solids, especially the nitrogenous, is often not far from normal, as in these the histologic renal changes may be but slight in character, the secretory structure not being sufficiently implicated to show marked

[1] Read before the College of Physicians of Philadelphia, April 4, 1894.

[2] The American Journal of the Medical Sciences, December, 1893.

[1] I stated that "Mahomed adopted the term chronic Bright's disease as a convenient generic name for a condition which Gull and Sutton had previously described of generalized arterio-capillary fibroid change. Contrary to the view of Johnson, an extension of that of Bright, and following in the lead of the above-mentioned investigators, Mahomed viewed the condition underlying the various stages of granular or fibroid kidney as a systemic disorder, in which the cardio-vascular alterations were not dependent upon, but either antedated the development of the kidney fibrosis, or more rarely existed without renal change. It was not necessary for him that the kidney be the seat of degeneration to constitute Bright's disease. Fibroid kidney was but an unnecessary, if more or less to be expected, incident in the general morbid state. Renal fibrosis did not always appear, though general arterial change occurred."

[2] Bright's Disease. William Wood & Co.

[3] "The Pre-Albuminuric Stage of Chronic Bright's Disease," Chicago Medical Journal and Examiner, May, 1885.

[4] American Journal of the Medical Sciences, 1886, vol. xci, p. 407.

deviation from healthy function. When such deviation, however, becomes apparent, it is likely to be coincident with the appearance of decided amounts of albumin and of casts in the urine, with dropsy and marked uremic symptoms.

Until the appearance of my paper no mention had been made by systematic writers of the likelihood of the occurrence of a non-albuminuric form of chronic kidney disease[1] other than that regarded as a typical interstitial nephritis, with characteristic symptoms, although a case here and there has been occasionally reported, notably such as one recently detailed by Reed,[2] to which my attention has just been directed, in which the few symptoms detailed suggest that it is closely akin to, if not actually identical with, the class I have described. Its withdrawal, however, from one of the time-honored categories is not thought of. As Purdy, following out the lines drawn by Mahomed, refers to such cases under the title of the pre-albuminuric stage of chronic Bright's disease, so Dr. Reed discusses the case he relates under the caption the "diagnosis and treatment of the *early stages* of chronic Bright's disease." What I especially desire to emphasize is that there certainly exists a class of cases probably of common occurrence, with symptoms which place them in a group entirely distinct from what is known as chronic interstitial nephritis. In these the most aggravated symptoms of renal inadequacy may be present, such as are common only in an advanced stage of kidney-disease, and yet albumin remains totally absent from the urine.

That these cases have a pathology distinct from the so-called arterio-capillary fibroid kidney (the red granular or contracted kidney, or interstitial or catarrhal nephritis) I have no doubt; but the most exact post-mortem investigation into the character and distribution of the histologic change is necessary in cases which, dying, still preserve the usual symptom-grouping, in order to determine the actual differences. Probably a lack of comprehension of certain facts so lucidly expressed by the late Sir William Gull, who, in considering the pathology of fibroid kidney, so ably argued against the unity of renal disease, has done much to prevent a faithful and exact study and a proper differentiation of the various forms of chronic nephritis.

Gull adverted to the erroneous inference so often drawn by the illogical, that, because *post mortem* in the several forms of renal disease histologic changes are encountered common to all forms, it should follow that these are of a kind, with an identical pathology. He says it is "as though one should assert that all scars of the skin, seeing that they have largely common histological characters, have also one pathology."

It is a well-recognized fact that whatever the form of chronic nephritis, whether it have distinctly arisen in tubule, glomerulus, or in interstitial renal structure, eventually, in the later stages of the malady, the histologic changes are liable to have become so diffuse, with coincident symptomatic change in the type of the ailment, that a necropsy totally fails to throw light on the exact character or anatomic seat of the original morbid condition, however limited its nature may have been for a long time.[1]

In cases of the sort that I described, therefore, the exact pathologic footing must remain a matter of conjecture until a series of necropsies are obtained with death occurring before marked change in type is manifest, before generalized fibrosis has become evident, or albumin has appeared in the urine. This may be possible only after a period of years, but will be the earlier the greater the number of these cases that are recognized, collected, and followed. Light may only be thrown on the pathologic position of such cases through death from an intercurrent malady.

It certainly seems logical that a group furnishing more or less prominently symptoms so distinctive and separable from those of the well-recognized forms of chronic nephritis has a distinct pathology. With an oliguria as persistent and as marked in certain cases as in the most outspoken type of chronic parenchymatous nephritis, and with a urine as concentrated, yet with absence of cardiac debility and of dropsy to indicate its source, there occur as grave continuous symptoms of renal inade-

[1] Apart entirely from the disadvantages of a cognominal nomenclature, I have thought it better to discard the term *Bright's disease*, especially in referring to non-albuminuric forms, as here employed it is essentially misleading—Bright's researches referring solely to affections of the kidney having as their chief mode of recognition the invariable presence of albumin in the urine.

[2] Medical Record, New York, April 1, 1893.

[1] In reference to this point, Sir William Gull argued that, although within limits, the morbid anatomy of the kidney is distinctive of the pathologic condition from which it originates, yet "It would seem not to be sufficiently considered that, in the nature of the case, the morbid forms of histological expression are limited, whatever may be their pathology, and hence these lines of morbid tissue-change will have a tendency to approach each other as they proceed. For example, interstitial nepbritis, and its results in fibroid tissue and contraction, may occur in kidneys in which the morbific agencies may entirely differ among themselves. In catarrhal nephritis there are various grades of interstitial nephritis, which may produce granulations of the organs, though such interstitial changes may have quite a different meaning from that which occurs in the fibroid kidney . . . And the same might be said of the nephritis of scarlatina, of pregnancy, and of other forms. In fact . . . in all cases of renal lesions there will be an approximation more or less to histological changes common to the whole. . . . For, however the lesion may have begun, and from whatever cause it may have sprung, its results are destructive; and in the process of destruction they must approximate toward each other, and, therefore, contraction, granulation, and atrophy may occur in any nephritis, so that the exclusive morbid anatomist will readily find on the post-mortem table a strong confirmation that there is but one nephritis, one Bright's disease."

quacy—those, indeed, of pronounced uremia. These are associated, too, as in chronic parenchymatous nephritis, with as marked diminution in urinary solids, notably diminution in urea and mineral ingredients, indicating undoubted secretory involvement; yet totally unlike what is distinctive of parenchymatous nephritis, albumin is so persistently absent from the urine, even with the existence of the aggravated symptoms of renal incompetency, as to clearly indicate that its presence need form no part of the assemblage of symptoms or have any relation to the morbid condition.

The following table graphically presents the chief points of differentiation characterizing the well-known chief varieties of chronic nephritis and the few cases of the non-albuminuric form studied:

Chronic parenchymatous nephritis.	Chronic interstitial nephritis.	A form of non-albuminuric chronic nephritis closely resembling neither.
Urine always albuminous. In amount it is scanty, except during secondary atrophy; then it may be abundant. It is light-colored, depositing urates readily. Specific gravity normal or higher than normal, though low for the total amount passed.	Urine not constantly albuminous. Usually, however, albuminous in degree recognizable by HNO_3 (Heller's method). Urine profuse in amount (unless indications of cardiac failure present, with accompanying signs, dropsy, etc.), light-colored, low gravity. Sediment usually slight; often none visible.	If urine is ever albuminous, it is probably not as an incident of the malady, as the most decided symptoms of renal inadequacy may be present, even producing chronic uremia, with albumin persistently absent from the urine. Urine subnormal in amount; usually quite scanty and high-colored, and this totally without evidences of cardiac weakness, and with persistent high blood-pressure and absent dropsy, indicating that the source of the oliguria is probably not of vascular origin. The specific gravity is normal or higher than normal, though relatively low for the amount of urine voided.
Casts numerous and in great variety; epithelial, granular, waxy, and hyaline. Blood-corpuscles and connective-tissue shreds not infrequent. Microscopically, urates and phosphates predominate; oxalates less common.	Casts not frequent. When detected commonly hyaline, and less often granular. Renal epithelium and blood-cells generally scanty or absent. Oxalates common.	Casts common, although, as a rule, not very numerous; principally hyaline, but finely granular present in all in less number. Epithelial casts rare; seen in very small number in two of the cases. Waxy casts noted in one. Cylindroids present in all: in several very numerous—both mucous and hyaline. Renal epithelium in all. Oxalates very common. Urates often in relative excess. Occasionally blood-cells and pus-cells.
Urea usually much diminished in amount. Uric acid practically normal.	Total solids often normal. Urea may be normal. Usually somewhat diminished. Uric acid usually diminished.	Total solids—urea and mineral salts—always diminished in amount. Uric acid normal or diminished.
Cardiac hypertrophy not invariable, although blood-pressure tends to be habitually raised. Atheroma of arteries not common early in the affection.	Cardiac hypertrophy usual. Blood-pressure habitually raised. Fibrosis of arteries almost invariable, usually to a pronounced degree.	Cardiac hypertrophy not detectable in any of the cases, although in all the first sound is more or less forcible, and in none is it weak. In all the aortic second sound is also accentuated at the apex. Blood-pressure is habitually raised in all save one. This elevation is not detectable in two while on a strictly non-nitrogenous diet; arterial fibrosis not evident in any.
Uremic symptoms common, although often less frequent than in interstitial nephritis. No loin-pain.	Uremic symptoms common. No loin-pain.	Uremic symptoms common. Loin-tire, or pronounced aching, usual.
Dropsy usual and obstinate.	No dropsy, and even edema often not detectable until disease advanced.	No dropsy; edema not common.
Occurs most frequently before age of forty. Patient pale, waxy looking.	Occurs most frequently after forty, at degenerative period of life. Patient for a long time shows only signs of failure of nutrition. Complexion grayish.	Three of the seven cases under thirty; others at or approach middle life. None show signs of a degenerative process. Facies pale, but not marked anemia.

The six cases previously reported agree quite closely as regards the chief symptoms and the urinary condition. In all there are more or less marked symptoms of impairment of the general health, suggesting an underlying general ailment. There is imperfect gastric digestion, as shown in several, by examination of the gastric secretions, to be of the nature of subacidity and delayed propulsion. There are headache, vertigo, loin-pain, oliguria, with diminution in the most important of the urinary constituents, and the presence of casts. In all of the cases diminution in the amount of urine is a prominent symptom. During the period in which continuous observations were made on the urine of one of the series,[1] however, the urine was nearly normal in amount, averaging a daily quantity of 1085 c.c. The season was cold and water was drunk much in excess of thirst to stimulate diuresis. Subsequently the amount of urine much diminished, and now but 500 c.c. are commonly passed. There is marked increase in uremic phenomena. The patient became so

[1] Case I, W. B., see p. 662, American Journal of the Medical Sciences, December, 1893.

debilitated that he was compelled to abandon his occupation, and is wintering in Algiers, without, however, deriving benefit from the change of climate. Case II, a brother of the preceding, also has steadily declined in health. The amount of urine voided is habitually low. There are now present, besides more or less constant headache, aching in the loins, prostration, spells of vertigo, and, not infrequently, at night, attacks of slight convulsive seizures of unquestionably uremic nature. Without the appearance of albumin in the urine, these symptoms were common on leaving this city for a warmer climate three months ago. Cases V and VI, which have also been under observation, show no change from the condition noted in the previous paper. Cases III and IV I have, unfortunately, been unable to follow, despite every effort. Case III was an office patient; the other was seen in consultation; she changed her residence, and has not since been located.

The following case, not before reported, which I have had under observation for some time, corresponds clinically so closely, respecting the most prominent of the symptoms, with the histories of the others that it is worthy of study as another example of how pronounced the symptoms of chronic nephritis may be without the presence of albumin in the urine. Its recital will serve to emphasize the fact of the occurrence of such cases, which are doubtless very often overlooked in the consulting-room, in consequence of too blind faith being placed upon negative results reached from an examination of single unmixed specimens of urine for albumin and by the use of the urinometer:[1]

Mrs. F. S., a widow, aged fifty years, weight 110 pounds, by occupation a hospital nurse, has borne two children, one thirty-two, the other now thirty years of age; she has had no miscarriages and has led a correct life. There is no history of any disease of childhood, save measles. There is no history of diphtheria, typhoid fever, malaria, gout, syphilis, or lead-poisoning. There is on the maternal and paternal side a history of tuberculosis pulmonum, but she has never herself shown a tuberculous tendency.

She never at any time had a serious illness until about fifteen years ago. Then she was confined to bed for some eleven months by an ailment or complication of ailments the nature of which, from the best description the patient can now give, is not clear. The most lucid description she can give of her prior condition and that of the illness mentioned, is that she had not been well for a considerable time preceding the sudden development of the latter. She had felt weary, mentally dull, and incapable of exertion, and had vertigo, all somewhat after her present symptoms, though then felt less markedly. There had been anorexia, but on the day of the onset of the illness she had excessive appetite. The same night vomiting and purging appeared. She then became very sick, too much so to now recall the exact symptoms which subsequently developed. Her physician, since deceased, diagnosticated the condition as one of "abscesses in the liver, inflammation of the kidneys, and dropsy in the left chest." The left side of the chest was at first the seat of severe pain and subsequently of enlargement. The feet and abdomen were also somewhat swollen. She recalls nothing being said as to the condition of the urine at this time. Subsequent to this attack, which, whatever its nature, was finally recovered from, she remained in quite fair health until two or three years ago, when there appeared noticeable, yet then not so aggravated, symptoms of renal disorder such as are now manifest. She can recall at no time in her life of voiding more than a moderate amount of urine, but believes that until the past few (perhaps three or four) years the quantity habitually passed was about normal. At all events it was never in excess of normal. Within three or four years she has been surprised at the small quantity habitually voided. This has rarely exceeded a pint daily unless a diuretic was taken, and lately has been persistently less. During the winter of 1892 and 1893, and the spring of the last-mentioned year, the amount fell below a pint, and at one time, by measure, for some weeks averaged only about from ten to twelve ounces. A sample was then examined by a physician whom she consulted because of her symptoms and the oliguria. It was reported to her that the examination showed the urine normal. At this time the abandonment of work and a prolonged rest of several months in the country, with tonics, improved her condition. The urine then rose to about a pint daily and thus continued until the autumn of 1893. She has noticed for a long time a tendency to perspire quite freely when the quantity of urine has diminished, so that probably the action of the skin in her case is very complemental and prevents the occurrence of pronounced uremic symptoms which otherwise might arise.

The face and ankles have had a tendency to puff slightly lately, but there has been no more than a very moderate edema manifest. She has had, with persistent anorexia, frequent spells of nausea, and sometimes vomiting, even while the stomach is free from food. Vertigo is common, especially while on the street. Headache has been for a long time quite persistent. Though she has had symptoms of impaired digestion, the bowels have been quite regular until the past year. In this time attacks of slight diarrhea have been common, occurring at intervals of a few months, coincidently with attacks of severe abdominal cramps and the passage of more or less large quantities of mucous casts from the bowel. When she first consulted me it was especially for relief from this condition. So little was said regarding her general ill-health during the

[1] That is, not examining as to the daily amount, and judging, with freedom from albumin and with normal color and specific gravity of single specimens, that this practically excludes a renal ailment.

first few times that I saw her, that it was not until the bowel-trouble was relieved that I began to suspect a latent renal affection, apart from movable kidney, which I had previously looked for and excluded.

I examined several unmixed, and subsequently mixed, specimens of her urine during the time she was under treatment for the attacks of mucous enteritis. These were always free from albumin as tested by picric acid, and of proper color and specific gravity for a normal twenty-four-hour amount, which quantity then I did not note. During the following month (November last) the general symptoms of ill-health detailed, such as headache, vertigo, nausea, somnolence, apart from the bowel-condition, which for the time was removed, became so decided and seemed so suggestive that I began examination of the twenty-four-hour urine both chemically and microscopically. As before, I found no albumin. The urea was low and there were present numerous cylindroids and hyaline casts. Several twenty-four-hour specimens were so examined at odd times, with the same result, before the consecutive daily examination to be detailed was undertaken. As regards general symptoms, during these visits, I noted as follows: Cardiac examination, repeated on several occasions, showed no evidence of enlargement; the apex was normally placed; the impulse, though forcible was not heaving; there were no murmurs; the sounds were clear; the second was especially accentuated, and markedly so at the apex. Signs of arterial sclerosis were totally absent. Though the patient was not fleshy, the temporals were not discernible, save to palpation, and then gave no evidence of thickening; nor did the radials, the feel of which, however, was that of raised tension; for though some pressure with the proximal finger was required to obliterate the blood-stream, when a greater amount was applied it was impossible to clearly palpate the artery by the distal finger. Appended are her sphygmograms, with which many others since taken at intervals of from a week to ten days correspond. The tracing is typically that of high arterial tension. The second shows anacrotism, in her case very often produced on increasing the amount of sphygmographic pressure on the pulse. This anacrotic condition here, with total absence of evidence of aortic stenosis or other cardiac disease, indicates resistance in the arterioles, so characteristic of chronic nephritis.

Tracing No. 1.

Sitting. Pressure, three ounces.

Tracing No. 2.

Anacrotic tracing. Sitting. Pressure, three and a half ounces.

Headache is constant. Vertigo is common when in the erect posture, and at times it is so decided as to render her gait unsteady. There is persistent slight nausea. At times vomiting occurs and is independent of taking food. She is perpetually drowsy, though she sleeps very badly and is disturbed by night-terrors. Recently dull aching in the loins has been common—a symptom so constantly present in the other cases.

Dr. C. A. Oliver kindly examined her eyes, rendering me a very complete report, of which the following, having sole reference to the eye-ground, is a summary:

"A well-pronounced perivasculitis in each eye, more marked in the right eye, which is associated with a slight concentric contraction of the visual fields, these being the only ocular changes of any pathological significance; the first symptom indicating probable general vascular disturbance of a similar type."

On being unable to detect albumin in any of the single or mixed twenty-four-hour specimens of urine, even by delicate tests, I later began a systematic examination of daily consecutive twenty-four-hour specimens over a period of thirty-two days to ascertain whether albumin might not exist on some occasions. At this time as well, the total consecutive daily amount of urine passed, the urea, uric acid, and chlorids were estimated as noted here. During this period of somewhat over a month, the patient was upon ordinary diet, eating animal food once or twice daily. The precaution was always observed to void urine prior to stool. I am absolutely certain that the figures as cited represent the actual amount passed. No laxative, save a small nightly dose of cascara, was taken during this period, and no other drugs were then used.

Average daily amount of urine in 32 consecutive days, 356 c.c. or 12 fl.oz.

Average daily amount of urea in 32 consecutive days, 10.52 grams or 162 grs.

Average daily amount of uric acid in 14 consecutive days, 0.3660 gram or 5.6364 grains.

Average daily amount of chlorin in 14 consecutive days, 1.82 grams or 28 grains, or calculated as NaCl, 3 grams (46.2 grains).

Average daily specific gravity for 32 consecutive days, 1025¾.

Approximate average daily amount of the total urinary solids during the period of 32 days, 20.65 grams or 309 grains.

The color varied from red, when the amount was below 300 c.c., to yellowish-red, reddish-yellow or yellow, when the amount was above this figure.

The urinary solids[1] in this case are very low, representing for the body-weight and ordinary diet not more than what the excretion of urea should be, while the urea-excretion is about one-half the normal. The only mineral ingredient of the urine estimated in this case was the chlorids. These were taken, as representing that found pretty constantly diminished in chronic nephritis, and also as the habitual diminution of the urinary chlorin in face of a coincident diminution in secretion of HCl in the stomach

[1] The total solids here approximately estimated are calculated by the very simple method of multiplying the last two figures of the specific gravity by the number of ounces of urine passed; this equals the amount in grains. If an accurate urinometer is used and corrections for temperature noted (as should always be done for whatever purpose observations on the specific gravity are made) and urea and chlorin calculated coincidently, this method furnishes results that are of the greatest clinical accuracy.

(as was ascertained here) shows unquestionably incompetent kidneys, sodium chlorid remaining in excess in the blood, if ingested with food, as in this case, in ordinary quantity. Here the chlorin-excretion, like that of urea, is markedly subnormal; the figure, 1.82 grams (= 3 grams NaCl), is less than half the ordinary output. Uric-acid excretion is apparently diminished also, though not to more than a slight degree.

The influence of various remedies in common use for their diuretic effect in cases of inactive kidneys, such as the vegetable acid salts of potassium, the solution of iron and ammonium acetate, and, later, cantharides, was successively tried. The alkaline diuretics and Basham's mixture were without effect. The tincture of cantharides in doses of from 3 to 12 drops, three times daily, did not influence the amount passed, which at the time lay between 240 c.c. (8 fluidounces) and 380 c.c. (11 fluidounces) until taken for a week; then an increase occurred to 480 c.c. (16 fluidounces), and thence gradually to upward of 700 c.c.—this last for one day only. This augmentation was not subsequently maintained, although the remedy was continued in varying doses. The amount gradually fell, despite the cantharides, to the old figure. Regularity of the bowels was maintained by cascara. An occasional free calomel purge was given. No marked effect was apparent in the symptoms from these procedures, save that vertigo and headache were temporarily diminished by free purgation.

From the now well known effect of thyroid extract on the urine in cases of myxedema, increasing the urinary water and nitrogen,[1] it seemed worth a trial in this and analogous cases with incompetent kidneys, the secretory function of which was so profoundly affected. It is not beyond theoretic probability at least that such a remedy as this, exerting a specific effect upon the secretory epithelium, might also, if continued sufficiently long in disease of the viscus, which normally it can so influence, exert more than a transitory effect for good. The patient has now taken thyroid extract steadily for a month. It will be continued for some time should no untoward effect arise. At first the extract was administered in doses of 5 grains three times daily for a period of four days only, to note its effect upon the urine both before, during, and after using. Subsequently it was re-begun in doses of from 3 to 5 grains three times daily, and is so continued.

Daily amount of urine for 5 consecutive days before thyroid extract, 396 c.c.

Daily amount of urine while taking thyroid extract for four days, 574 c.c.

Average daily urea-excretion before, 11.19 grams.

Average daily urea-excretion during, 12.91 grams.

As already indicated, a sharp diminution in amount succeeded the rise under thyroid extract, on temporarily discontinuing the latter. Subsequently the urine again increased in amount on resuming the remedy. It has since maintained itself at a fair average, running between 450 c.c. and 900 c.c. There is as yet no more than slight symptomatic improvement.

On several occasions prior to the period in which the continuous daily estimations of urine were made, while no drugs were taken, throughout this time, and subsequently, until the patient began thyroid extract, under which the urine became too turbid for careful testing, extended examinations for albumin of the twenty-four-hour urine were made. Daily consecutive examinations were carried out, always on an identical plan, from November 29th to December 31st, save on three days on which no tests were made for albumin. It was not unusual for the urine, because of its concentration, to be turbid from urates with a room-temperature of 55° to 60° F. This turbidity occurred with about three-fourths of the specimens. The urine always cleared perfectly by heat, and no trace of cloud occurred on prolonged boiling—a process that a small portion of the urine was put through on each occasion that the turbid urine was tested.[1] A considerable number of microscopic examinations were made, chiefly of the specimens in which no great turbidity occurred from precipitation of amorphous urates after standing, but also in some of the latter when this condition persisted for several days. Then nearly the total bulk of urine, after the application of a gentle heat to assist in the solution of the urates, was diluted from the few ounces representing nearly the twenty-four-hour quantity to that equalling a more normal amount, and a little sodium carbonate added to maintain the urates in solution. For microscopic examination the urine was always allowed to stand in a tall glass from twelve to twenty-four hours, and the sediment thus obtained centrifugalized. On all occasions cylindroids were found and usually in large amount. On several instances the number was surprising. They were, as a rule, mucous, but not infrequently perfectly hyaline. Typical hyaline casts, medium-sized, broad, and narrow, were often found, but were less in number than the cylindroids. From time to time a few undoubted finely granular casts were also encountered. The sediment, from the concentration of its diluent, was always highly rich in cellular elements from the extra-renal passages. There were in the slides of nearly all specimens examined a few cells detected, the appearance of which suggested origin from the convoluted tubules. Epithelial casts were not found. Calcium-oxalate crystals were always present, and frequently those of free uric acid.

The most interesting feature of this urine is that relating to the probable total absence of traces of serum-albumin, in the face of diminution in bulk of that fluid and indubitable evidence, both rational and physical, of renal disease. Very critical and searching examinations were pursued on all occasions, both on each of the days on which estima-

[1] See a paper by Ord and White, British Medical Journal, July 29, 1893.

[1] Its usual high acidity did not render necessary the coincident use of acetic acid with the boiling test, save on two occasions in which a slight phosphatic cloud occurred, dissipated by the use of a few drops of dilute acid.

tions were made of the nitrogenous excretion, as already recorded, and frequently since. Yet at no time have I obtained a reaction by any test which indicates the presence of serum-albumin. The methods employed for testing were very similar to those detailed in my former paper, with the exception that dialysis was often also used. In the application of the tests, the filtered, acid urine, which if turbid from urates was cleared by gentle heat, was first carefully overlaid with picric acid; a second specimen was similarly tested with Millard's solution, and still another with glacial phosphoric acid. Any indication of a contact-ring occurring within a few minutes after application of the tests—in about one-third of the occasions a slight contact haze or ring was usual to picric acid after the tube stood a few moments, usually, however, only when the urine was greatly concentrated—350 c.c. and under—on which occasion also mucous cylindroids were found to abound in the urine—the urine was treated with acetic acid (5 c.c. of 25 per cent. glacial acid to 15 c.c. of urine), thoroughly agitated, allowed to stand, and then filtered. The urine so treated became slightly cloudy, and subsequently deposited fine flakes of mucin. This mucin-reaction was more apparent when the specimen was first diluted with an equal bulk or more of water, though no large additions were practised with specimens to which it was intended to apply tests for albumin, lest minute traces of the latter present might by too great dilution escape detection even by the delicate tests employed. The acidified specimen was then repeatedly filtered and the excess of acid was neutralized by a concentrated solution of NaHO from a buret. After subsequent filtration and acidification the picric-acid test was once more applied. Note of the amount of acid and alkali added was always taken, and a second control-solution of the urine diluted with distilled water to the bulk of its treated companion was tested for albumin similarly to the other, that it might be known whether the occurrence of the disappearance of this reaction to these was rather in consequence of too great dilution than to separation of a substance coagulable with acetic acid, such as mucin or nucleo-albumin. It was found that invariably with urine so treated, had a previous response occurred to the contact-test with picric acid not dissipated by placing the tube in hot water, and this response on no occasion amounted to more than a slight ring or contact-haze, of tardy appearance,[1] none subsequently occurred when the picric-acid test was applied to the specimen so manipulated, though the reaction was always evident in that of the control diluted with water, as stated. The result was similar when Millard's solution[1] was employed, as it was on a number of occasions, to supplement but not to supplant the picric acid. With metaphosphoric acid, used in the glacial state, had a haze occurred with it, as was frequently the case when the contact of the portion of acid was of greater duration than from three to five minutes,[2] no reaction occurred in the acidified, non-mucinous, unneutralized specimen. After the addition of soda, though the specimen was subsequently rendered acid, at the end of from ten to fifteen minutes a narrow, opaque ring would develop, quite unlike what is the case with an albuminous response, just above the portion of acid. This was noticed on two occasions in which this test was so applied. It probably indicates, as Dr. Leffmann suggests to me, a reaction between the metaphosphoric acid and the excess of sodium salt present or some substance contributed by the NaHO.

Thorough ebullition of the upper stratum of the undiluted acid urine in a test-tube was always negative as regards even a trace of comparative haze. The result of boiling specimens dialyzed to a specific gravity of about 1008 and 1004, by which dialysis most of the salts and coloring-matter were removed, was likewise negative unless a small amount of a weak acetic-acid solution was first added to the yet acid urine. On several occasions, dialyzing carefully to quite a low gravity, the urine still remained transparent and free from more than a slight haze. On a number of occasions but a trace of haze was present, though brought to a gravity of but from 1002 to 1004. This was especially notable when portions of the twenty-four-hour amount which had equalled 400 c.c. or over were dialyzed. When 1002 was reached (which occurred when dialysis was continued for from sixteen to twenty hours) of samples of the urine representing originally great concentration (about 300 c.c.), the specimen was usually too turbid from spontaneous precipitation of mucin for the application of tests. Dialyzed specimens from the daily quantity which had equalled or exceeded 400 c.c., and still remained sufficiently free from cloud for testing, treated with HNO_3 by the contact-method,[3] and by heat and acid, gave no reaction. When the dialysis was car-

[1] No drugs were administered during the time these tests were made, save a nightly dose of cascara, as stated. Dilutions were always carried after the first few trials up to two and a half times the amount of urine used, so that if 300 c.c. equalled the twenty-four-hour quantity, after dilution the amount would equal a twenty-four-hour specimen of 700 c.c., still but about one-half the average normal quantity. Dilution was rendered necessary to obviate danger of reaction between the excess of sodium acetate formed in neutralizing and the tests for albumin employed, thus obscuring the response of the latter. The addition of an excess of acetic acid was necessary to insure any marked precipitation of mucinous substance in a urine so concentrated—rich in salts, the latter preventing separation of the soluble mucin unless acted upon by a great deal of acid.

[1] This solution does not react so strongly to mucin as other of the delicate tests, such as trichloracetic acid, Tanret's and Sebelein's reagents. In Millard's solution acetic acid exists as a base which has little or no precipitating influence in this direction.

[2] A slight response is common in all non-albuminous concentrated urines with metaphosphoric acid at the end of from three to five minutes. This is probably mucinous. Dr. Leffmann, who has for years employed the metaphosphoric acid in albumin-testing by preference to all others, tells me he disregards a response not occurring within three minutes' contact.

[3] After dialysis, by which salts and coloring-matter are removed, the contact HNO_3 test is of far greater delicacy for the detection of traces of serum-albumin than before. See a very interesting and instructive paper by Kirk on mucin-testing in the urine, *Lancet*, April 26 and May 3, 1890.

ried to 1001 to 1002, a few drops of 2 per cent. acetic acid alone, or this plus heat, produced some turbidity; and subsequently, after standing, fine, flaky strings, characteristic of mucin, separated. That this turbidity was due solely to mucin I think there is no doubt. The addition of more acid to a second portion, without the employment of ebullition, allowing also this portion to stand until precipitation of the mucin was assured, prevented more than the slightest contact-haze, when any was apparent to the contact-test with picric acid and with Millard's solution. This same dialyzed urine always responded markedly by the contact-method to citric acid, especially when used in 25 per cent. solution, giving a much broader contact-haze than did picric acid. This was evident, too, in the undiluted, undialyzed urine. Here, in testing with various percentages of citric acid, from a saturated solution to a low dilution, it was found that a 33 per cent. solution gave the most marked contact-response. With this percentage the reaction was always quite pronounced. In the dialyzed urine the addition of a few drops of a 25 per cent. citric-acid solution always induced some opacity.

The urine under consideration was especially interesting for study because of the small quantity voided. It represented in amount one already reduced by concentration from a normal 1200 c.c. to an average of 350 c.c. On some days it was considerably less in amount than this, the lowest being 250 c.c. (8⅓ fluidounces). It would be surprising, indeed, if a urine so concentrated and so rich in cellular elements as this was shown microscopically to be did not respond to the more delicate tests for albumin, because of the concentrated normal amount of nucleo-albumin, or mucin, it must contain, derived from the urinary passages outside the kidneys, disregarding even that no small quantity probably present in this case, as in all of this sort, derived from the renal cells themselves, due to their defective metabolism.[1]

It seems now established that serum-albumin as an exudate from the blood takes no part in the formation of casts. That these may be present without an accompanying albuminuria is certain. This dissociation was well illustrated in the previous series of cases of non-albuminous nephritis that I reported. In the urine of all of these casts were more or less frequently present, as in the present case. Casts are now regarded on the best of evidence as the product of faulty metamorphosis or inflammatory irritation of the renal epithelium,[2] by which a secretion from or a disintegration of the protoplasm of the latter occur, resulting in the formation of cylindroids or true cylinders. With the presence of mucous cylindroids in any amount, should the urine be concentrated, mucin is also present in amount usually detectable by acetic acid when added in excess, and unless regarded will mislead when delicate tests for albumin are employed, as these, without exception, also react to mucin.[1]

I think that it may be accepted in the case just detailed, as in those of the others previously reported, in all of which a more or less concentrated urine occurred, that even small amounts of serum-albumin are in all probability absent, and that from the behavior of the urine to picric acid, when a slight reaction with it was obtained, as sometimes occurred, that this was in all probability due to the presence of an albuminoid of a mucinous (or nucleo-albuminous) nature. The urine of several of these cases, especially when much concentrated, was rich in mucin yielding cellular elements derived from the genito-urinary passages, apart from that probably originating from the epithelium of the kidney. In granular kidney, in those cases in which the urine is often singularly free from sediment, and of low gravity, showing diminution in salts, and in which the prior use of acetic acid without heat causes no cloud, but with which the most reliable finer tests for albumin respond, the reaction in all probability is that of serum-albumin. I recently examined the urine of a case of this sort over some days. It had been suspected by the physician to be albumin-free. The patient was senile, with an hypertrophied heart and rigid arteries. The urine was subnormal in amount, of low gravity, low urea, chlorids, and uric acid, and deposited no sediment, even after twenty-four hours' standing. Specimens centrifugalized likewise yielded none. No reaction occurred to Heller's contact-test with HNO_3, but to picric acid and metaphosphoric acid a response was evident, and on two occasions a slight opacity was detected by boiling, with the addition of acetic acid.

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The Eighth International Ophthalmological Congress will be held at Edinburgh on the 7th, 8th, 9th, and 10th of August. Owing to the death of Professor Donders, who has presided on previous occasions, the Edinburgh Congress will be under the presidency of Dr. Argyll Robertson. In response to a previous circular, about two hundred British and foreign oculists have intimated their intention of taking part in the proceedings. Arrangements are being made for holding a discussion on the subject of "Intra-ocular Therapeutics." Dr. George A. Berry is the General Secretary.

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1 As to this, see the last portion of the second part of Kirk's paper, before referred to. Kirk there calls attention to a *renal mucinuria* independent of albuminuria and to the frequent association of the two in ordinary nephritis. This last is well known. In my case the persistent low excretion of urinary salts and the presence of numerous casts and cylindroids well indicated the tubular disturbance of function.

2 See Lubarsch, Centralbl. f. allgem. Path., Band iv, No. 6, and Aufrecht, Centralbl. f. klin. med., June 30, 1893.

1 I have left the further consideration of this part of the subject to be taken up in a second paper devoted to fallacies attending the employment of certain delicate tests for serum-albumin, notably the trichloracetic acid.

CESAREAN SECTION AND SYMPHYSIOTOMY FOR THE RELATIVE INDICATIONS.[1]

With a Report of Cases.

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The problem of successful delivery to mother and child in complicated labor derives new interest from the results of modern obstetric surgery. At the present time obstetricians have better grounds than formerly for the hope that such cases may be terminated with but little mortality and comparatively little suffering. Symphysiotomy under antiseptic precautions is as yet sufficiently new to render of interest a report of its results, especially as affording a basis of judgment in determining its scope. It is the purpose of this paper to report two symphysiotomies for the relative indication, and a third case in which symphysiotomy was declined, and the Cesarean section chosen in its stead. These contrasted cases will lead to the discussion of the reasons for choosing the operative procedures mentioned.

By the phrase "symphysiotomy for the relative indication" is meant the performance of the operation in cases in which it would have been possible to extract a dead child by craniotomy without dividing the mother's symphysis, and in which some might claim that a difficult and tedious application of the forceps might possibly have resulted in the birth of a child capable of surviving without the operation of symphysiotomy. It is my belief, however, that it is the duty of the obstetrician, whenever possible, to avoid difficult extraction with the forceps, not only on account of the fetal mortality that sometimes results, but also because of the fetal morbidity, especially after injuries to the skull and brain, that not infrequently follows such delivery. To my mind cases in which there is a strong probability that the fetus will sustain serious injury in delivery, as evidenced by failure of the fetal head to engage after sufficient uterine contractions have persisted for a reasonable time, call for surgical interference in the interests of both mother and child. The cases of symphysiotomy are briefly as follows:

Case I.—J. McN., aged twenty-five years, an Englishwoman, entered the Jefferson Maternity during last autumn. Her previous history was not obtainable at the time, because of the patient's reticence and intentional misstatements. It has been learned, however, that she is married; that five years ago she bore a small, ill-developed fetus, after a spontaneous labor lasting five days; she has also had an abortion at four months.

On admission she was found to be in the eighth month of pregnancy, her fetus occupying the first position, the head at the brim of the pelvis, and capable of being brought just within the brim by pressure; it could not, however, be made to engage. Her pelvic measurements were as follows:

	CM.
Anterior superior spines	24
Crests	25
Trochanters	24.5
External conjugate	16
Internal by measurement	7.25

The fact that the head of the fetus could not be made to engage led me to omit the induction of labor, and to allow the patient to go to term, with the expectation of delivering her, by suitable operative interference, should the head then not engage. She engaged in housework with the other patients, and was carefully examined at intervals of ten days or two weeks, when it was found on each occasion that the head could be brought to the brim of the pelvis, but could not be made to enter the pelvic cavity. The fact that the head presented at the pelvic cavity led me to believe that but little enlargement of the pelvis would be needed to accomplish its delivery. On December 22d labor began, the uterine contractions being regular and of considerable force; labor progressed with increasing pains, the membranes ruptured, but complete dilatation was tardy, and the pains were ineffectual in causing engagement. The os was accordingly dilated with Barnes' bags and the patient anesthetized with ether, and a careful effort made by suprapubic pressure and uterine massage to cause the head to engage. As these efforts failed, and the heart-sounds of the fetus indicated that the child was in excellent condition, symphysiotomy was performed. It was necessary to dissect away the recti muscles to gain free access to the joint, and also to completely sever the subpubic ligament; the method employed was by an incision above the pubes, terminating three quarters of an inch above the joint, thus leaving an unbroken cutaneous surface directly over the symphysis. The joint was severed with the Galbiati knife, inserted from below, traction being made from below upward and from in front posteriorly. The pubes separated three-quarters of an inch after section, the head engaged in the left oblique diameter, the occiput behind, and was readily delivered by Tarnier's axis-traction forceps; the pelvic floor and perineum were uninjured. A strand of iodoform-gauze was carried behind the symphysis, to prevent the bladder and adjoining tissues from being pinched between the parts of the symphysis as the pelvis was brought together. The wound was closed in the usual manner, an open stitch being left at the lower end, which was tied when the gauze was removed twenty-four hours after operation.

The patient made a good recovery, retarded only by gastric irritability arising from her previous excessive indulgence in tea. She was kept recumbent for four weeks, and was dressed with an antiseptic dressing over the wound, antiseptic absorbent pads over

[1] Read before the College of Physicians of Philadelphia, April 4, 1894.

the vulva, with a single strip of adhesive plaster, eight inches wide, drawn tightly around the pelvis, the center of the strip being over the trochanters of the femora. She was lifted out of bed daily, and care taken to prevent irritation of the skin, and to maintain cleanliness. Her child was a well-developed male, 46 cm. long, weighing 7 pounds, 11 ounces; the measurements of his head were as follows:

	cm.
Occipito-frontal	11.5
Occipito-mental	14
Maximum	13
Biparietal	11
Bifrontal	9
Trachelo-bregmatic	9.75
Suboccipito-bregmatic	10
Bisacromial	11
Circumference	36

Since her convalescence the patient has been kept in the Maternity, and employed in domestic service, in order to accurately observe the condition of her pelvis. She has been examined by Dr. Robt. P. Harris and Dr. H. Augustus Wilson. She has firm and complete union at the symphysis, whether osseous or fibroid cannot be stated. She experienced, when first allowed to get up, some lameness in the right sacro-iliac joint, which has since disappeared. She is able to carry coal up and down stairs, to scrub and lift, as well as other women in the Maternity who have not been subjected to symphysiotomy, and who are not in a pregnant condition. She has nursed her child, and is in good general health. The measurements of her pelvis at the present time show a slight increase, possibly as the result of the symphysiotomy; thus, very careful measurement shows that in the distance between the crests of the ilia and between the trochanters there is an increase of 0.5 cm. Her external conjugate is 1 cm. greater than before the symphysiotomy. Her internal conjugate is 0.75 cm. greater. According to her own calculation, and from the appearance of her fetus, she had, when delivered, gone several weeks over the period of normal gestation.

CASE II is that of M. F., a young married woman, aged twenty years, whose previous history was negative. She did not know the date of her last menstruation, and had never recognized fetal movements. Her general development was poor; she was poorly nourished when admitted, and manifested an unstable condition of the nervous system. An examination of her pelvis gave the following measurements:

	cm.
Anterior superior spines	22.5
Crests	25
Trochanters	27
External conjugate	19
Internal conjugate	9.5

Her fetus occupied the first position, the head presenting. The period of her pregnancy was the end of the seventh or the beginning of the eighth month. An examination of the urine revealed a deficiency in excretion. The percentage of urea remained below the average, the specific gravity being less than usual, although albumin and casts were absent. The woman remained in fair health until the 7th or 8th of March, 1894, when she manifested symptoms of toxemia; she complained of headache, disordered vision, great restlessness, and had exaggerated melancholia, and nausea. An examination of her urine for several consecutive days revealed a rapid diminution in the percentage of urea, although albumin was present in a mere trace, and casts were absent. The amount of urine diminished progressively. The percentage of urea, which should have been from 1.4 to 1.8, fell as low as 0.01. Instructions were immediately given that the induction of labor should begin; this was accomplished by the introduction of bougies, which was followed by uterine contractions characterized by excessive pain. The patient was given calomel in small and repeated doses, a hot bath and pack, fed upon skimmed milk, and made to drink freely of water, when the percentage of urea rose to 1.4. After forty-eight hours of very gradual labor by the stimulus of bougies in the uterus, the patient came into active labor on the 16th; her pains were vigorous, and caused great suffering; dilatation being tardy, Barnes' dilators and McLean's dilators were employed, and dilatation being complete, the patient was anesthetized with ether, the membranes were ruptured, and an endeavor was made to bring the head to engage; this could not be effected; the head presented, the occiput posteriorly and upon the right side. After a fair trial had been given to secure engagement, symphysiotomy was performed, as previously described. In this case, as the disproportion between the head and the pelvis was much less than in the previous case, the subpubic ligament was but partly severed; the head at once engaged, although the parietal bone presented at the brim of the pelvis. An effort was made to apply Tarnier's forceps to the sides of the head, but it could not be readily locked. Simpson's forceps was then applied with the axis-traction tapes, and the head gradually brought to the floor of the pelvis, where incomplete rotation occurred. The occiput was delivered posteriorly, the pelvic floor being uninjured. The child was asphyxiated, but was revived without great difficulty. The head at birth measured:

	cm.
Maximum diameter	12.5
Suboccipito-bregmatic	10
Occipito-mental	12.5
Occipito-frontal	11
Fronto-mental	9
Biparietal	9
Bitemporal	9
Bisacromial	11
Total length	46

Sex, male.
Weight, 5 pounds 11 ounces.

The child was placed in an incubator, and fed with breast-milk pumped from the mother's breasts and dropped into the mouth with a medicine-dropper.

Eighteen hours after delivery the mother was seized with eclamptic convulsions; as she had received $\frac{8}{30}$ of a grain of strychnin hypodermatically in divided doses, and as her convulsions were not typical, there was doubt as to their precise nature. Dr. Hare saw her in consultation, and found

no evidence of strychnin-poisoning. Under the use of the hot pack her convulsions ceased, and did not return. Her percentage of urea remained nearly normal, and has risen to normal, and her convalescence has been uninterrupted. She is able to nurse her child, which is developing normally. Her wound has healed, although she has not yet been permitted to assume the erect posture.

In contrast with the foregoing is the next case:

Case III.—In this case the Sänger-Cesarean section was chosen instead of symphysiotomy. Mrs. E. H., aged twenty-seven years, of excellent general health and good physique, married at eighteen, had been pregnant five times previously. Her first, third, fourth, and fifth labors were terminated by the use of forceps, each labor resulting in the birth of a dead child. All of the children were large; the first was twenty-three inches long, and weighed thirteen and one-half pounds; the others weighed more than twelve pounds. Her second labor terminated spontaneously, a small male child being born, although her medical attendant at the time despaired of a successful termination of the labor, and had sent for assistance, when under strong pains the head emerged with defective mechanism of labor. The exact manner of delivery neither the patient nor her husband can describe. The child, however, was small, but is living and in good health. The patient corresponded with me during the winter, stating that she was resident in the mining regions of the State; that she had endured repeated unsuccessful labor, and was desirous of obtaining at the termination of her present pregnancy a living child. She gladly came to the city, and presented herself at my office for examination. In general appearance, physique, and width of her hips she seemed an exceptionally robust woman; it was evident from the size of the abdominal tumor that her uterus contained an unusually large child. An examination of her pelvis gave the following measurements:

	cm.
Anterior superior spines	28
Crests	30
Trochanters	29.5
External conjugate	19.5

Vaginal examination showed the rami of the pubis approximating each other much more closely than normal. Palpation of the inner surface of the pelvis revealed a funnel-shaped pelvis, the cavity narrowing very appreciably toward the outlet. In comparison with the breadth of the patient's shoulders and the width of the iliac bones, it was seen that she had a flattened and converging pelvis. The fetal heart-sounds were heard upon the right side of the abdomen, four inches above the umbilicus, indistinctly over a wide area. The os uteri was patulous, but no presenting part could be detected. The symphysis pubis was two and one-half inches in height.

The patient was convalescent from influenza, and had an obstinate cough; she was told that an operation would be necessary for her safe delivery, to which she assented. She was instructed to go immediately to the Polyclinic, where it was intended to prepare her for delivery by surgical means; she neglected, however, to report at the hospital for twenty-four hours, when she came in at midnight on January 14th, in labor. In the early morning of January 15th her pains became frequent and severe; the membranes ruptured, and a breech-presentation could be detected; the child remained high in the mother's abdomen, the breech failing to engage. Dr. Robert P. Harris met me in consultation over the patient about six hours after the beginning of labor; his first advice was to perform symphysiotomy, but when palpation and auscultation confirmed the diagnosis of breech-presentation, and the large size of the child was apparent, together with the fact that version could not be performed on account of the loss of amniotic liquid, Dr. Harris and my colleague at the Polyclinic, Dr. Baer, agreed with me in choosing Cesarean section.

On account of the patient's condition of bronchial irritation, chloroform was administered by my assistant, Dr. Wm. H. Wells. In listening for the heart-sounds it was found that the placenta was attached to the anterior wall of the uterus, and would probably be encountered in the incision. The abdomen being opened, the uterus presented, large in size, and rotated from right to left upon its axis. While Dr. Baer skilfully controlled hemorrhage by taking the broad ligaments between his fingers, I incised the uterus, finding the placenta directly beneath the incision. The placenta was immediately severed, stripped from the wall of the uterus, and the child, placenta, and membranes delivered in a few seconds. The child was delivered by the feet, was asphyxiated, but speedily revived. The uterus was turned out of the abdomen, and closed by four buried sutures of heavy silk, six stitches through the muscle and peritoneum, and seven fine silk stitches in the peritoneum only. There was but little hemorrhage, although bleeding from one of the sinuses required two additional stitches. The size of the uterus required an abdominal incision extending above the umbilicus, which was closed by continuous suture through the aponeurosis, and fourteen interrupted stitches. The patient showed little shock, the uterus contracted well, and there was no secondary hemorrhage or relaxation. The child was a female, weighing 11.75 pounds, and 52 cm. long. The measurements of its head were as follows:

	cm.
Occipito-frontal	13
Suboccipito-bregmatic	11.25
Biparietal	10.25
Bitemporal	9.25
Occipito-mental	14
Maximum	15
Bisacromial	12.5

The mother's convalescence was jeopardized by two complications: her cough continued obstinate for several days, and catarrhal pneumonia seemed threatened for a short time. These conditions gradually subsided. Her failure to report promptly at the hospital had given insufficient time to disinfect the surface of the abdomen, and a single stitch-hole abscess required attention for a few days. With these exceptions, her convalescence was uneventful; she nurses her child and is living in good health in

the city. Because of the length of the abdominal incision, the stitches were retained as long as possible in her case, as it was feared that violent cough might reopen the incision.

This case is of interest in connection with the preceding, because symphysiotomy was declined for two reasons: first, the funnel shape of the pelvis promised less in gain of space after symphysiotomy than in pelves shaped as in the preceding cases; second, Dr. Harris informed me that breech-presentation is less favorable for delivery after symphysiotomy than head-presentation, and as the membranes had ruptured, it was impossible to turn the child before operating. Dr. Harris was positive, on seeing the child, that it could not have been safely delivered by breech-presentation after symphysiotomy. Five weeks after delivery, examination of the patient revealed the following condition: The cervix uteri pointed downward and slightly backward; the uterus was adherent to the abdominal wall, reaching a hand's breadth above the pubes. Involution of the uterus had proceeded fairly well; a slight amount of mucous secretion from the cervix was present.

The report of these cases is offered as an illustration of what I believe to be a fair deduction from the results of modern obstetric surgery, namely, that in cases in which the fetus is disproportionate in size to the mother's pelvis, and in which after spontaneous efforts have failed to secure engagement of the presenting part in a reasonable time, and these efforts have been supplemented by thorough examination under anesthesia and a fair trial to secure engagement by manipulation and suprapubic pressure, that if the fetus be living and in good condition, it is the duty of the obstetrician to refrain from application of the forceps, and to deliver the patient by some form of abdominal section, either by symphysiotomy or by the Cesarean operation.

CLINICAL LECTURE.

ADVANCED PHLEBITIS, WITH CALCAREOUS DEGENERATION.[1]

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This patient, a German woman, aged seventy-one, presents an interesting condition of the veins of the lower extremities. She is very talkative, and her statements are not reliable. On entering the hospital she was pale; her abdomen was distended from constipation; there was edema of the lower extremities; and her general condition was one of low vitality. You notice that in trying to tell her age she has become very much confused, and now she turns the conversation very abruptly by saying that she wants "to see the angels in heaven." The patient was sent to the hospital on account of the general mental and bodily enfeeblement of old age. The edema of the lower extremities has nearly disappeared after several days in bed.

On examining her I find an eczematous patch on the left forearm, which has the appearance of a cicatrix, but the skin is neither thicker nor thinner than in neighboring parts. On the right forearm you will notice the discoloration of hemorrhagic exudates such as frequently occur in old persons with degenerate vessels. I wish, however, to call your attention especially to the superficial veins of the legs. The varices are very evident, and the veins are not only dilated, but they have undergone calcareous infiltration. They feel like lead-pencils and can easily be picked up and rolled about under the skin. On striking them with a hard object the sound is like that produced by striking a piece of lime. Undoubtedly, the circulation is entirely obstructed in some of the veins. The internal saphenous vein can be traced to its disappearance in the saphenous opening. It is sacculated in places, and the valves have doubtless long ago been obliterated. The chronic inflammation and distortion of the veins are analogous to arteritis deformans, but they are much less common, because the veins are not subjected to the high blood-pressure which is constant in the arteries. After the inflammation in the veins has gone on for some time and the inner coat has become broken, calcareous salts are deposited in the intravenous ulcers, and there is a marked tendency to the formation of thrombi. Many of the coagula have doubtless been detached and have occluded the vein higher up, and probably some have passed into the arterial circulation and become lodged as emboli in the smaller arteries. So far as we know the history of the case, none of the emboli has lodged where it could cause sufficient interference with function to attract attention. You can readily understand that the condition of the veins of the lower extremities might interfere so much with the return circulation as to cause an exudation of serum into the cellular tissue. As a matter of fact, however, another cause was found for the edema in this case, which affords an illustration of the necessity of careful examination and of the unwisdom of hastily jumping at conclusions. The patient's urine was found to contain a small amount of albumin, some granular casts, and showed an elimination of only eight grams of urea in twenty-four hours, thus indicating the existence of contracted kidneys.

The time for the treatment of these veins was many years ago. When the varix was recent, even the elastic stocking might have prevented their further degeneration. Now the only radical relief would be surgical, and at her age and in her weak state, operation would be contra-indicated. So we must acknowledge frankly that nothing will be undertaken for the treatment of the vascular condition. The mental state, however, can be improved by appropriate management. Our attention must be given to the chronic nephritis, but the only condition to which I care to call your attention to-day is the exaggerated and advanced disease of the veins, which in its degree is a pathologic curiosity, although the disease itself is not uncommon.

[1] Delivered at the Buffalo General Hospital.

CLINICAL MEMORANDA.

INJURY TO THE CAUDA EQUINA, PROBABLY DUE TO INTRA-MENINGEAL HEMORRHAGE; WITH RECOVERY.[1]

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of Troy, N. Y.;
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S. L. R., forty-one years old, is an American, married, and by occupation a grocer. His father and mother are living and in good health. The patient has been in perfect health since childhood, and, with the exception of gonorrhea, has had no venereal disease. He has of late drunk whiskey and other alcoholic liquors quite freely. On April 16, 1891, while under the influence of alcohol, he was thrown from an electric car, striking on the lowermost part of the spine; the patient places his hand over the region of the sacrum as the seat of pain and injury. He was found in an unconscious condition, and was then taken home. On the way he regained consciousness, and it was then discovered that he was totally paralyzed as to motion in his lower extremities, not being able to flex or extend his toes. On the following day it was discovered that there was a total "paralytic incontinence." The bladder was carefully emptied by the catheter, the introduction of which was entirely unrecognized by the patient, showing anesthesia of the mucous membrane of urethra. The feces, when semi-solid or liquid, would pass uncontrolled, but if they were very hard mechanical measures were necessary to remove them. On several occasions, when feces became impacted, the mechanical manipulation necessary to remove them excited no pain, and he had but little knowledge of what was going on in the rectum. He complained bitterly of pain over the sacral region, of a sharp, shooting character, and greatly aggravated by movement; the pain was at times of an agonizing character, and was mostly localized over the sacrum, but would occasionally pass down the distribution of the great sciatic nerves. The urine was carefully withdrawn at stated intervals. In May the man had recurring chills and high fever, with marked changes in the urine; this was ammoniacal, contained pus and bladder-epithelium, proofs of a "retention-cystitis." This state of affairs was soon corrected by salol and thorough irrigation with a boric-acid solution.

My first acquaintance with the case was on May 1, 1891, when I saw the patient in consultation with my friend Dr. John Morris, of Troy, who had been his medical attendant. I found him recumbent and unable to move his lower extremities; there remained slight power of abduction; adduction was entirely lost; the paralysis of motion was most marked from the knees down. There was a characteristic foot-drop, and he was unable to move the toes or to flex or extend the feet. There was marked atrophy of the peronei muscles, the anterior and posterior tibials, and the muscles of the calf, with considerable wasting of the vasti and of the gluteus maximus. The paralysis and atrophy were much more noticeable throughout the whole right side. By actual measurement a difference of three-quarters of an inch was discovered, the smaller circumference being on the right side; the limbs were flaccid, somewhat swollen, cold, and cyanotic. The patella, plantar, and cremasteric reflexes were absent on both sides, and there was no foot-clonus. The umbilical reflex was present. The sphincter ani was relaxed, and offered no resistance to the introduction of the finger. There appeared to be a decided blunting of sensibility of the rectal mucous surfaces, because when the finger was in the rectum considerable pressure with the nail was not followed by pain. There was no response to the faradic current in all of the atrophied muscles, namely, the gluteus maximus, vasti, peronei, the tibial, and the calf muscles. There were slow, worm-like contractions of these muscles in closing the current with the positive pole; there was no

The transverse lines represent the areas of complete anesthesia.

response to the negative pole, forty cells being in the circuit—in other words, there was decided degenerative reaction. The sexual power was entirely lost, and the man had had no erections since the accident. A sensory loss of peculiar distribution was discovered; this loss can best be explained by the diagram shown herewith, namely, an entire loss of the tactile, pain, and temperature senses over an area extending about two inches to either side of the tuber ischii, involving the region of skin between the gluteal fold; this loss involved particularly the skin of the perineum, that of most of the scrotum, and the skin of the penis to near its root. A narrow patch of anesthesia extended down the posterior aspect of the thighs, and involved also the soles, and extended up the posterior aspect of the legs. Over the anesthetic area there was no perception of strong electric currents. Bedsores never developed, which I think may have been due to the extreme care on the part of his nurse. There have been no feelings of con-

[1] Read by title at New York State Medical Society Meeting, 1894.

striction about the legs or thighs. The catheter could be introduced when the patient was blindfolded without eliciting any response or knowledge of its presence. Careful examination of the lower lumbar and sacral regions showed nothing abnormal. There were no abnormal symptoms as regards the cranial nerves, and the upper extremities were normal.

The treatment consisted of moderate doses of potassium iodid, with tr. nucis vomicæ thrice daily, and three electric treatments weekly. At the expiration of five weeks the following indications of improvement were noted: The man was able to adduct, abduct, flex, and extend the left thigh. Two weeks later he began to be able to contract the left calf-muscles, and ten days afterward he was able to flex the foot on the leg, but there was absolutely no motion of the toes, nor could he raise that member from the bed. Ten weeks after the accident he could extend and flex the thigh of the right side, and there was at same time slight evidence of ability to contract the calf-muscles. Three months after the accident he could move the toes of the left foot, and was able to lift that member from the bed. At about the same time there was an ability to flex, extend, and separate the toes of the right foot. Fourteen weeks after the injury he could raise the right leg from bed and sustain it in that position for some time. At this time a careful examination was again made. The muscles that were decidedly atrophied were regaining their size, losing their flabby appearance, and responding sluggishly to strong faradic currents. The reflexes remained as at first. The anesthetic areas were becoming sensitive at the periphery. The condition of the skin of the perineum, scrotum, and penis was not at all improved. The catheter excited no pain or feelings of its presence. The rectal sphincter had slightly recovered its tone. The only change in treatment was the substitution of increasing doses of strychnin and the addition of massage.

Five months after the injury there was a decided improvement, the patient being able to walk with the aid of crutches, and could stand alone, and the patellar reflexes were present. The patient felt the introduction of the catheter, although not in a normal manner. During the past two weeks he had had two nocturnal emissions. He knows when the rectum is full, but has no power over the sphincter muscles. There was a gradual fading away of the anesthetic zones. The atrophied muscles responded to negative closing with forty cells, and to strong faradic currents. On October 1, 1891, the man walked from his home to my office, a distance of about one mile, with but slight fatigue. There was a slight shuffling gait, and the toes "stuck to the floor." There was an entire return of sensation, save over the perineum and the inferior part of the scrotum. He felt perfectly the introduction of the catheter, and was able to control the bladder and urinate at will. The rectal sphincter had regained very much its tone, although it offered no great resistance to the finger, and he still resorted to enemata to evacuate the rectum. Sexual power was perfect.

The interesting clinical features of this case, and those upon which one may be almost positive in making a correct diagnosis of the nature and location of the lesions, seem to be as follows: Most noteworthy was the peculiar sensory loss, being in the anatomic distribution of the lesser sciatic, the pudic, inferior pudendal, and hemorrhoidal nerves, all arising from the lower sacral plexus. Secondly, the early involvement of the sphincters of the bladder and rectum, and the very late disappearance of their paralysis, arising, as they probably do, from the third, fourth, and fifth sacral segments, and being supplied by the fourth sacral nerve. Thirdly, the distribution of the muscles most affected and last to recover, namely, the anterior and posterior tibials, those of the calf and the intrinsic muscles of the feet, with the gluteus maximus, receiving their nerve-supply, with the exception of the gluteus maximus, almost entirely from branches of the great sciatic nerve; with a more moderate involvement, a lesser degree of atrophy, and a rapid improvement of the extensor quadriceps and the adductors of the thigh. Lastly, the absence of any external evidence of fracture or dislocation. All of the symptoms point to an intra-meningeal hemorrhage, compressing the leash of nerves that go to form the cauda equina, exciting inflammation in those nerves, with, as absorption took place, a release of the pressure and a rapid recovery.

AN ERYTHEMA OF LEPRA CONTAINING GIANT-CELL-LIKE STRUCTURES, SIMULATING SOMEWHAT THE GIANT-CELLS FOUND IN TUBERCULOSIS.

By DOUGLASS W. MONTGOMERY, M.D.,
Professor of Diseases of the Skin, Medical Department of the University of California; Consulting Physician for Diseases of the Skin and for Pathology, German Hospital.

On May 4, 1892, an American, thirty-three years of age, and unmarried, was brought to me by a fellow-practitioner. There was a reddish-brown, elevated, flattened, erythematous patch with fairly steep edges, about as large as a fifty-cent piece, over the left malar bone, which had appeared as a small pimple about two years before. It had existed for a long time as a small spot, and once had almost entirely disappeared. There was also a red, desquamating patch, about the size of a silver dollar, over the anterior surface of the lower third of the right radius. This patch the man said had appeared, in shape like a ringworm—a reddish-brown circle with a white center—about three months before. It had not the ringworm appearance when I saw it, because he had accidentally burnt it six weeks previously.

The muscles of the arm and those of the face were normal. There was no atrophy and no fibrillary twitching of the muscles. Both ulnar nerves could be felt distinct and hard as they passed over the internal condyles; they were somewhat more irritable than normal.

There was marked analgesia, but no appreciable anesthesia of the patches. I cut a good-sized piece out of the patch on the face, and he felt very little pain. He said he felt pain when he burnt the patch on the forearm six weeks before. Heat he sometimes appreciated, but cold not at all, on the spot on the face. Both heat and cold appeared to be about equally obtunded on the spot on the arm. The sense of pressure and that of locality seemed to be normal. There was no summation of pain, that peculiar symptom which is elicited by pricking the skin a great number of times, when the pain is not felt

as a lot of individual twinges, but as one pain, the sum of all the pricks. Eyesight, smell, taste and hearing were good. The patellar tendon-reflexes were normal, and there was no foot-clonus.

In 1883 he had gone to the Sandwich Islands, and remained one year. He then came back to the United States for a year and a half, after which he returned to the Islands for five years.

He had a weakness for liquor, and indulgence was accompanied by venereal abandonment. In this way he had frequently acquired venereal sores, but gave no further history of syphilis.

Although there could be no reasonable doubt that he was suffering from leprosy, yet, on account of the history, and also because some "bald patches" were found on the dorsum of the tongue, it was determined to try the effect of antisyphilitic medication. Both protiodid of mercury, a grain a day, and potassium iodid, sixty grains a day, were tried without effect.

The juice (smear-preparations), as well as sections of the piece cut from the patch on the face, were examined carefully for lepra-bacilli, but fruitlessly. This is exactly what was to have been expected, as lepra-bacilli are exceedingly difficult to demonstrate in such lesions. Dr. Armauer Hansen told me in a letter anent this case, that he himself had often searched vainly for them, although they had been demonstrated in such patches about one year ago (in 1891) by Dr. Looft, of Bergen, Norway.

But the chief interest in the sections lay in the presence of structures which were wonderfully like, yet in many respects unlike, giant-cells, for it has been asserted on good authority that giant-cells do not occur in the lesions of lepra. They were like giant-cells in that they consisted of a hyaline center surrounded by nuclei, but in many respects they differed from true giant-cells—they were too circular, and they were surrounded by one row, usually complete, of round nuclei, while the nuclei of Langhans' giant-cells are usually oval, and frequently heaped up more numerously at one end of the cell than at the other. They could hardly have been derived from the confluence of the epithelial cells lining the sweat-duct, for, as Hansen remarked, they frequently lay close up under the papillary layer of the skin. Dr. Hansen suggested, and I think the suggestion is undoubtedly correct, that they were capillary blood-vessels, the nuclei of which were undergoing proliferation.[1] These capillaries were not filled with blood, but with a hyaline, possibly gelatinous substance, which gave the appearance of the center of a giant-cell. Many other widely dilated capillaries were found, with nuclei projecting into the lumen, but without the hyaline filling. There was a considerable amount of round-celled inflammatory infiltration in the connective tissue.[2]

The further history of the case, with the treatment, is also interesting.

After the failure of the antisyphilitic treatment, the patient was given sodium salicylate, about twenty grains a day for six weeks, when salol was prescribed in doses running from forty to sixty grains a day, and continued for several weeks. Then the salol was reduced to thirty grains a day, and has been continued ever since, with intermissions of variable length, during which sodium salicylate was prescribed. Sixteen weeks after first coming under my notice a hard, tense cord, about as thick as ordinary twine, was found extending from the patch on the lower outer side of the right forearm upward and inward toward the middle of the bend of the elbow, which it almost reached. This cord, when twanged, gave a "funny-bone" sensation in the radial half of the dorsum of the right hand. There was one node on this cord situated about midway between the patch in the skin and the bend of the elbow. This cord afterward became much more nodular.[1]

Toward the end of September, 1893, a little over sixteen months after first seeing the patient, the upper part of the patch on the arm had a segment of a circle of brown pigment in it; the lower part of the patch was devoid of pigment, being whiter than the surrounding skin. I ran a needle through the skin without causing pain, and touch was hardly perceptible in the middle of the altered area. The lesion on the side of the face had vanished, and the appearance and sensations of the skin of its site were normal, but it grew redder than the rest of the face when the patient became heated.

The question of cutting down upon and extirpating the diseased nerve was now mooted, but decided against, as the manifestations on the face and in the ulnar nerves had shown that the affection was not localized.

At present the only evidence of active disease is this knotted nerve in the forearm and the slightly enlarged ulnar nerves, and these lesions do not seem to be progressive; it even seems to me that the nerve running up from the anesthetic patch is somewhat smaller than it used to be.

Can we say with any degree of positiveness that the

[1] Dilated bloodvessels with proliferating endothelium have frequently given rise to errors in diagnosis; for instance, Von Winiwarter, in speaking of plexiform angiomata, says that "the endothelial cells are stout, and the nuclei project decidedly into the lumen of the vessel. The individual endothelial cells are sometimes placed so closely together that they simulate cylinder-celled epithelium, and one may be in doubt whether the structure before one is a bloodvessel or a sweat-duct." Die chirurgischen Krankenheiten der Haut und des Zellgewebes. Von Dr. A. von Winiwarter. S. 529.

[2] Others have also been puzzled by these structures. For instance, Danielssen, in an article ("Zur Therapie der Lepra," Ergänzungsheft zum Archiv für Dermatologie und Syphilis, February, 1893, No. 1), says: "Dr. Abraham sent some slides to the laboratory of the Lungegaards Hospital, and both Armauer Hansen and Dr. Looft agreed that the supposed myeloplaques found in them were transverse sections of bloodvessels, with nuclear proliferation of the intima. Dr. Looft showed in similar slides, by serial sections, that these structures were transverse and oblique cuts through bloodvessels. Neither Hansen nor Looft, although they have examined thousands of slides, have ever been able to find myeloplaques in leprous tissue."

[1] It might be thought that this knotted cord was not a nerve but a lymphatic, because of its course upward and inward toward the median line, but a superficial nerve could easily take this course, as the cutaneous branch of the radial pierces the superficial fascia far over toward the median line in many cases. But it might be objected that this structure was grossly implicated, far too grossly, if a nerve, to give so few indications of interference with its functions. Herein lies one of the peculiarities of leprous neuritis, as a nerve attacked by leprosy may display very decided evidence of disease anatomically, and almost none functionally, as set forth in a case reported by Arning and Nonne, "Weiterer Beitrag zur Klinik und Anatomie der Neuritis leprosa," von Dr. Ed. Arning und Dr. M. Nonne, *Virchow's Archiv*, Band cxxxiv, S. 319.

disease is going on to a cure, and if so, what part had the therapeutics to do with the improvement? We can neither say that the disease is improving, nor that the medication is having any influence over it. It is not an uncommon thing for leprosy to attack a nerve, and then remain apparently quiescent for many years. It seems to me, however, from the comparatively small experience I have had in this direction that both salol and sodium salicylate have some beneficial effect on the course of leprosy. Leprosy, like tuberculosis, however, is subject to striking and unexpected improvement without the use of any drug whatever, or simply from the hopefulness of trying a treatment. We all know what an amount of misery many of these new treatments have caused, especially in tuberculosis. The lepers, being almost without exception poor, have escaped receiving so much attention. The contributors to this misery are in some instances culpable and in others innocent. When a medical man is not of a judicial and critical temperament he is likely to honestly attribute too much to the treatment, and the golden rewards he reaps from his rose-colored reports of cases come to him guilelessly. But there are others whose wings are not those of the angel of healing, but of an obscene bird, and whose reports to medical journals are for the distinct purpose of filling the office with patients.

A CASE OF "GOLD-CURE"; MENTAL DERANGEMENT WITH EXTREME PROSTRATION FOLLOWING.

By ALEXANDER McPHEDRAN, M.B.,
Associate Professor of Medicine, University of Toronto, Toronto, Canada.

Although much less has been heard of late of the "gold-cure," the business is still widely carried on. The following case shows how very deleterious the effects which result from the treatment may be.

Mr. L., a young Englishman, of good family, had drunk to excess for some years. He had on several occasions stopped drinking for periods varying from a few weeks to a year or more. During last winter he drank very heavily. He entered a "gold-cure" establishment in March, 1893. He had then been drinking less for several days, and chose to go to the institution for the treatment himself. He remained there for twenty-four days, when he was pronounced "cured" and discharged. He returned to his friends, but his manner had changed much and was peculiar. He took no alcoholic liquor, but drank fresh cider very freely. His health failed, he lost flesh, and his mental change became so marked that he required a man to look after him, especially at night. On May 26th he returned to the "gold-cure" establishment, but he became so difficult to manage that he was transferred to the Toronto General Hospital two days later by the manager of the establishment.

When I saw him there on May 28th, he presented the appearance of one recovering from delirium tremens. In a few days he again grew worse and required three men to care for him. He lost color and flesh rapidly; vomiting was troublesome for two days. By June 10th he was extremely prostrate; there was marked internal strabismus of the right eye, and the left eye could not be turned outward beyond the direct line of the body. The pupils were alternately active and inactive, so that at one moment they responded readily to light, and the next remained quite immobile, even under a strong light; and in a minute they would respond again. The fundus oculi was quite healthy. Sleep was much disturbed and the speech was drawling. Liquid food was taken fairly well. After a few days the man began to improve and by June 20th his eyes had become normal and his mind fairly clear. The hemoglobin was reduced to 37 per cent. (v. Fleischl). The stomach-contents, after a "trial-breakfast," showed only a trace of HCl. Lavage was practised daily for a few days, and later every second day. Nitro-hydrochloric acid, iron, and strychnin were given freely. The man improved rapidly and by August 1st the hemoglobin had increased to 70 per cent., and he had gained correspondingly in weight and color. He returned to his home in England and remained there until November, when he came back in excellent health. He has so far abstained from drinking, but time only will prove if this reform will be more enduring than several previous ones.

The symptoms he describes as occurring during the "cure" treatment are those of belladonna-poisoning. When he took any alcoholic stimulant he received a special "jab," which caused intense nausea and vomiting, due, no doubt, to apomorphin.

Another man who lately took the "cure" is at present in the hospital. There is no HCl in the gastric contents. He is weak and incapacitated for any occupation since he left the institute in November last. The symptoms produced by the treatment in his case were those of decided belladonna-poisoning, but there was less vomiting and he did not notice that any special "jab" was administered after taking stimulants.

A PELVIC ABSCESS OF UNUSUAL COURSE AND TERMINATION.

By W. E. SHOTWELL, M.D.,
of Denver, Colorado.

On the evening of January 11th I was called to attend a young married woman, twenty years of age, whom I found suffering from intense pain in the left inguinal region. Upon examination I found a tumor that extended from a point a short distance within the true pelvis to the superior spinous process of the ilium on the left, and nearly to the umbilicus and median line of the abdomen on the right side. It was closely adherent to the left and posterior portion of the uterus. I could not elicit fluctuation. The tumor was very tense, was movable, and was sensitive to touch. The left tube and ovary were incorporated in the mass.

While the possibility of its being a pelvic abscess occurred to me, I could obtain no history of pus-formation. The patient had been and was in good health and flesh. She had had exacerbations of pain in this side at long intervals since childhood; otherwise she had suffered no inconvenience from the tumor and was not aware she had one. There was no history of pus-discharge through the utero-vaginal track. Menstruation was regular and normal; she denied ever having had an abortion. As she had just had her menses, she attributed her present trouble to taking "cold." Fearing the

grave nature of the tumor, I endeavored to impress upon the woman the constant danger to which she was exposed and urged an immediate operation. As she was soon relieved of suffering and felt "all right again," the proposition was rejected, at least for the present. On February 9th she came to my office to consult me on another matter, and before leaving I questioned her about the tumor. She said it gave her no trouble and she felt perfectly well on that side.

On February 22d she came to my office suffering, as she thought, from "piles." Upon examination I found an inflammatory mass nearly surrounding the lower part of the rectum and extending well into the lower portion of the left ischio-rectal fossa. It was very sensitive to touch and gave her a great deal of pain. She was feverish and very nervous. There was a line of tenderness along the rectum leading toward the tumor. The tumor itself gave her no trouble and presented the same general characteristics as on the former examination, excepting an absence of all pain and tenderness. While the symptoms were in the main those of a pending ischio-rectal abscess, I was suspicious of the line of tenderness along the rectum. On the evening of February 23d, as there was considerable tumefaction of the parts, I made a deep incision at the most prominent point, about one inch in length and a half-inch posteriorly, and to the left of the anus. I obtained no pus at the time, but within a few hours, she told me, it began to discharge through the incision, and for two days the pus "poured" out.

On the 27th of February the discharge ceased. The pain, fever, and nervousness were gone, and the patient felt perfectly well. She said to me, "Doctor, my bowels feel so flat, and I cannot find the tumor." It was true that there was not a trace of the tumor left. Such a favorable termination of so large a pelvic abscess must be very rare.

AN UNUSUAL ACCIDENT AFTER CELIOTOMY.

By E. H. KING, M.D.,
of Muscatine, Iowa.

In a celiotomy performed during the past year, the abdominal stitches—silkworm-gut—were removed on the eighth day, primary adhesion of the wound having occurred without suppuration. There had been persistent ether-nausea from the time of the operation. No opiates had been used. The bowels had been freely opened on the third day by enemata and salines. There was no distention of the abdomen and but slightly elevated temperature.

On the evening of the ninth day violent nausea, retching, and straining occurred, when two-thirds of the extent—about three inches—of the wound were torn open, allowing a part of the colon and omentum and a mass of small intestines to escape. I found the patient in extreme mental and physical shock. The protruding viscera were covered and protected by a towel wrung out of hot water until an assistant could be obtained, when they were returned within the abdomen and the peritoneum secured by fine catgut, and the parietal tissues with silkworm-gut sutures, all without anesthesia. Drainage was provided for by a small roll of iodoform-gauze. At the conclusion of the operation the patient's pulse was too weak and rapid to be counted; she was in great pain, and very restless. Free use of morphin, atropin, and strychnin was made, and enemata of hot beef-juice and whiskey were given. This was kept up at regular intervals for forty-eight hours, without any perceptible effect save to relieve pain, nausea, and restlessness; but after this the pulse began to increase in volume and decrease in frequency. The peritoneum united primarily and the parietal tissues secondarily, with but slight and superficial suppuration. The patient made a slow but good recovery. There is at present a small linear cicatrix, with no tendency to hernia.

It occurs to me, in view of the possibility of such an accident, that in clean celiotomies—that is, in operations in which the wound can be completely closed without the necessity of drainage—it would be a safeguard to fasten the omentum to the abdomen behind the incision, securing it by a stitch at the lower end of the wound, where by adhesion it would be interposed between the viscera and the weakened part of the abdominal wall, thereby reinforcing and strengthening it.

HOSPITAL NOTE.

TWO ATTACKS OF TYPHOID FEVER IN THE SAME PERSON.

German Hospital, Philadelphia.

Service of L. WOLFF, M.D.

[Reported by Alfred Hand, M.D., and Arthur J. Patek M.D., Resident Physicians.]

Second attacks of typhoid fever in the same individual are so rare as to make the following record of a well-authenticated case of practical importance:

M. Y., a female, aged nineteen years, was admitted to the hospital March 29, 1893. She had been feeling unwell for several weeks, with headache and moderate diarrhea, and had been confined to bed for six days before admission. The tongue was dry and coated, the pupils were dilated, the spleen was enlarged; there were a few rose-colored spots, and gurgling in the right iliac fossa was present. The pulse was weak, but improved in quality under treatment, consisting of systematic cool bathing. The temperature was taken every three hours and a bath administered, preceded and followed by a little wine, whenever the thermometer registered 102° F. The disease ran a mild course, and the patient left the hospital five and a half weeks after admission in good health.

On September 21, 1893, the patient was readmitted, suffering from a second attack of well-marked typhoid fever, being apparently at the ninth day of her illness. Her condition was as follows: Great depression, both mental and physical; severe headache, dilated pupils, constipation, dry and coated tongue, enlarged spleen, abdomen not distended, pain and gurgling in the right iliac fossa, and typical typhoid spots on the abdomen. The fastigium was of about one week's duration, and no complications arose during convalescence. The bath-treatment was adhered to, as in the first attack, and thirty-eight baths were administered. The patient was discharged four weeks after admission.

The striking similarity between the attacks is worthy of note. The number of baths was nearly equal—forty-three in the first and thirty-eight in the second attack. The temperature fell to normal on the same day on each occasion, as is shown by the appended record of the morning and evening temperatures of the attacks:

	First attack.	Second attack.
Evening temperature . . .	102.8° F.	103.4° F.
Morning " . . .	102.0	104.0
Evening " . . .	104.2	103.2
Morning " . . .	103.2	103.8
Evening " . . .	104.4	103.4
Morning " . . .	103.2	103.8
Evening " . . .	104 4	104.0
Morning " . . .	103.4	103.0
Evening " . . .	103.4	103.6
Morning " . . .	102.6	102.4
Evening " . . .	103.0	104.2
Morning " . . .	102.4	102 0
Evening " . . .	103.4	104.2
Morning " . . .	101.0	102.0
Evening " . . .	102 6	103.8
Morning " . . .	100.8	101.0
Evening " . . .	102.2	103.0
Morning " . . .	100 0	100.0
Evening " . . .	102.2	101.4
Morning " . . .	99.4	100.4
Evening " . . .	101.2	99.2
Morning " . . .	99.8	99.0
Evening " . . .	99.6	100.0
Morning " . . .	98.4	98.0

MEDICAL PROGRESS.

Successful Pyloroplasty.—SHEPHERD (*Medical Record*, No. 1213, p. 135) has reported the case of a farmer, twenty-nine years old, who during a period of fifteen years had from time to time suffered with gastric derangment, recurring attacks of gastritis lasting from two weeks to two months. In the intervals there were pain and heaviness after eating and gaseous eructation. The attack in which the patient came under observation had been in progress for three months, and severe vomiting had set in. The vomitus consisted of greenish materials and mucus and frequently looked like coffee-grounds. Pain usually came on two or three hours after eating. There had been a loss of fifty-five pounds in weight. The man was able to swallow only liquids, and even these caused distress until ejected by vomiting. On palpation the epigastric region was found to be excessively tender. The entire abdomen appeared to be occupied by a distended and dilated stomach. No tumor could, however, be detected. Examination of some of the vomited matter disclosed the presence of free acid and sarcinæ. A diagnosis of dilatation of the stomach dependent upon pyloric stenosis, probably not malignant, was made. Lavage was practised for a time with considerable relief. The case was deemed one for operation and the necessary preparations were accordingly made. For three days the patient's stomach was washed out daily with a warm solution of boric acid. At the end of this time an incision four inches long was made in the median line above the umbilicus. The pylorus was brought out of the wound and found to be surrounded by a dense mass of hard tissue about the size of a small egg, the anterior aspect of which was marked by a stellate scar. An incision was made into the stomach near the pylorus and a large mass was seen below the pyloric opening, and this appeared excavated, as though it had been the base of an old ulcer; it bled freely on manipulation. The pylorus barely admitted the tip of the little finger and only with some difficulty a small grooved director. The incision in the stomach was now extended through the constricted pylorus and into healthy duodenal tissue beyond for a distance of two and a half inches. The edges of the incision were now seized at about the middle with tenacula and retracted, thus rendering the wound a transverse one. In this way healthy stomach-tissue was approximated to healthy duodenum, the angles of the wound being formed by the old cicatricial tissue in front of the pylorus,which was now replaced by healthy tissue. To bring the angles of the wound together it was necessary to remove a V-shaped piece of the cicatricial tissue (which cut like cartilage) and to enlarge the original wound in the duodenum and stomach. Two rows of sutures were introduced, commencing at each angle, the central portion being sutured last. The abdominal wound was closed by a row of deep and one of superficial sutures. The patient was nourished by the rectum for three days and afterward carefully by the mouth. Recovery was uninterrupted. The man was dismissed at the end of four weeks. Five months after the operation he had gained sixty pounds in weight and stated that he had never felt better, having no trouble with his digestion.

Successful Treatment of Tuberculous Meningitis by Trephining and Drainage of the Sub-arachnoid Space.—ORD and WATERHOUSE (*Lancet*, No. 3680, p. 597) have reported the case of a girl, five years old, that had suffered with pain in the head for a month, with occasional vomiting, impaired appetite, constipation, and fretfulness. The child was dull and heavy in appearance and was very restless, from time to time uttering a shrill scream. She lay with her head bent forward and her legs drawn up. The temperature was slightly elevated, the pulse regular and accelerated, but weak, the respiration normal. No lesion of the thoracic or abdominal viscera could be detected. There was marked *tache cérébrale*. The knee-jerks were normal. There was commencing optic neuritis in both eyes, more marked in the left. The pain and the optic neuritis increased in intensity, the pulse became irregular, the child became lethargic and apathetic, and from time to time uttered a hydrocephalic cry. The pupils, at first contracted, subsequently became dilated, but strabismus or ptosis was not observed. The membranæ tympani were healthy. It was agreed that the condition was one of tuberculous meningitis, and in view of impending coma as a result of intra-cerebral pressure it was decided to open the sub-arachnoid space and afford drainage for a few days. A trephine-opening was made in the skull on the left side, between the mastoid process and the external occipital crest. The dura bulged into the opening, but no pulsation was visible. The dura and arachnoid were incised, and some thirty drops of a slightly greenish fluid escaped. The cerebellum then bulged into the opening. A silver probe, bent at a right angle, was then introduced between the cerebellum and the arachnoid, and directed inward

toward the falx cerebelli. As soon as the latter was felt the probe was rotated, so that the end projected toward the sub-arachnoid space, between the cerebellum and the medulla. Some drams of serous fluid at once escaped. A drainage-tube was then passed along the probe and left in position. It was found that the fluid passed very slowly along it. The dura was then sutured and the fragmented disc of removed bone replaced, room being left for the drainage-tube. The flap was adjusted with horsehair sutures and the wound was covered with cyanid dressings. The child bore the operation well. The wound discharged rather freely, and the optic neuritis gradually receded. On the eleventh day the wound appeared to be breaking down, and the stitches were removed, presenting gelatinous-looking granulations, in which, however, no specific elements were found. Neither was it possible to find tubercles or hemorrhages in the choroid. The drainage-tube was removed on the eighteenth day, and the child was well at the end of a month. Although, in view of the fortunate result, it is admitted that the evidence is not conclusive, it is nevertheless maintained that the case presented the classic picture of tuberculous meningitis, a diagnosis which was concurred in by all of the eight medical men who saw it before operation.

Paralysis of the Diaphragm.—Suckling (*Practitioner*, No. 309, p. 177) has reported the case of an adult male who complained of numbness in the feet and legs, and in a lesser degree in the upper extremities also. He was weak, and walked with difficulty. He spoke in a whisper, so that the possibility of hysteria was considered. The knee-jerk, however, was completely lost on both sides, and there was slight anesthesia in both lower extremities. The cough also was aphonic. The leg-thrust was feeble, but there was no absolute paralysis anywhere, and the power of dorsal extension of the feet still existed. There was no interference with the bladder or rectum. The grasp of the hands was weak; there was slight numbness in the arms, but no anesthesia. There were no ocular symptoms, and the patient made no complaint referable to the throat. On further inquiry it was learned that there had been a slight sore-throat two weeks previously, and on examination the pharynx was found somewhat anesthetic; but there had been no definite sign pointing to diphtheria and no paralysis of the soft palate or of the ocular muscles. On applying the hand in the hypochondrium the diaphragm was found to be weak upon both sides, only a slight degree of pressure being appreciable during inspiration. There was slight over-action of the lower intercostal muscles, and the respiratory sounds at the base of each lung were feeble. The patient himself was much alarmed about his condition, had experienced a sense of difficulty in breathing, and feared that he was going to die. The conclusion was reached that the case was one of peripheral neuritis consecutive to diphtheria, and that the aphonia was due to weakness of the diaphragm. Two days after this examination a thin, brownish membrane was discovered upon the soft palate, but the condition was otherwise unchanged. The patient was propped up in bed, to facilitate the action of the diaphragm, blistering fluid was applied over the course of the phrenic nerve on each side of the neck, and iron and strychnin were administered, together with alcohol and plenty of nourishing food, while inhalations of oxygen gas were given at frequent intervals. The difficulty of breathing, however, gradually increased and the patient died in the course of a few days, of asphyxia.

Virulent Staphylococci in a Latent Circumscribed Osteomyelitic Process after Many Years.—Schnitzler (*Centralblatt f. Bakteriologie u. Parasitenk.*, B. xv, Nos. 8, 9, p. 270) has reported the case of a man forty-two years old, without hereditary predisposition, who suffered a contusion of the right lower extremity at the age of seven years, followed in the course of two days by severe pain in the right tibia, together with marked swelling, in association with chills. At the end of six weeks, the patient meanwhile being in bed, the swelling ruptured spontaneously, with the discharge of pus, and subsequently of several pieces of bone. The suppuration gradually subsided, and in the course of half a year healing had taken place—*i. e.*, the fistula had closed and the symptoms had disappeared. The man remained in good health for thirty-four years, when severe pains in the right tibia suddenly appeared, together with febrile symptoms and a variable tumefaction in the right tibial region. For a time the phenomena were intermittent, but subsequently they became continuous. On examination the right tibia was found to be elongated and thickened in its lower half. The corresponding soft parts were edematous and the overlying skin was reddened. The lower third of the tibia was extremely sensitive to pressure. An operation was determined upon, and an incision was made through the cicatrix of the previous sinus. The periosteum and the bone were thickened, and the adjacent tissues edematous. There was nowhere any indication of a fistulous tract. The sclerosed bone was opened with the aid of a mallet, and at a depth of almost an inch a small cavity was found, perhaps as large as a walnut, everywhere surrounded by sclerotic bone, and containing granulations, bone-dust, and a small quantity of pus. The cavity was thoroughly scraped and curetted, and an iodoform-dressing applied. The discharge from the wound gradually diminished in amount, and at the end of four weeks the patient was dismissed, cured. On bacterioscopic examination only the staphylococcus aureus was found in the contents of the cavity, and this proved virulent to rabbits, in whose lesions the same organism was again found.

Fatal Secondary Hemorrhage following Removal of Faucial and Pharyngeal Tonsils.—Barkan (*Occidental Medical Times*, vol. viii, No. 3, p. 118) has reported the case of a strumous boy, six years old, who presented considerable enlargement of the faucial and pharyngeal tonsils. The child was a constant mouth-breather and experienced great respiratory difficulty during sleep; the voice was altered, but hearing was not impaired. The mother of the child likewise had enlarged tonsils. The right and then the left tonsil were successively removed with the guillotine. There was a more profuse hemorrhage than usual, though not enough to interfere with the immediate removal of a large pharyngeal tonsil by means of a Gottstein curet. The bleeding was copious, but soon subsided. A half-hour after the operation the child was sent home with his father, and instructions were given to

keep him quiet and give him iced-milk and liquids. Several hours later, after nausea and restlessness, the child vomited a large amount of clotted blood. On examination of the throat no bleeding-point could be detected; neither was there hemorrhage from the nasopharynx. Three hours later, after a period of excitement and restlessness, the boy cried and coughed a good deal, bringing on an attack of vomiting, large clots of bright-red blood being ejected, and clear blood flowing from the mouth and nose at the same time. The child now appeared moribund. Several injections of whiskey were made, a large enema of warm salt-water was administered, bottles of hot water were applied, and milk and whiskey were given. It was now determined to etherize the boy and cauterize the exposed surfaces with a thermo-cautery, and this was accordingly done. After the operation and the child had recovered, it was noticed that blood was trickling from the nose. An attempt was made to examine the throat, to determine the source of hemorrhage, but the child resisted. During the struggles, a sudden gush of blood took place, accompanied by a peculiar sound, as if blood had found its way into the trachea. The child gave a gasp and ceased breathing, and all attempts at revival proved fruitless.

Tuberculosis of the Bladder.—Hunter McGuire (*Virginia Medical Monthly*, vol. xx, No. 12, p. 1073) has reported the case of a man, twenty-two years old, with a strong tuberculous family history, who for two years had suffered with occasional symptoms of vesical disorder, although there had never been an attack of gonorrhea or syphilis. Three months before coming under observation, during the act of micturition, the man was suddenly seized with pain at the end of the penis, and the last few drops of urine passed were admixed with blood. Thereafter there was increased frequency of micturition, which became a source of great distress. The symptoms were intermittent, both the paroxysm and the interval being of variable duration. The urine was odorless, contained some pus, and was slightly acid. On examination, the right epididymis was found to be swollen, and an incision evacuated tuberculous-looking pus. Examination of the prostate gland through the rectum disclosed the presence of a number of hard, shot-like bodies. For the purpose of placing the bladder at rest, a suprapubic incision was made and a drainage-tube introduced into this viscus. The effect for good was almost immediate. The urine was drained off as fast as it was poured into the bladder, and the tenesmus ceased. In four or five months the man was well, and so continued for four years after the operation. Four other cases of like nature were treated similarly. Two terminated fatally soon after the operation; in these the tuberculous changes in the bladder were extreme; the bladder was contracted and the mucous membrane almost entirely destroyed. One died from exhaustion following the operation; the other a few weeks afterward from general tuberculosis. In both cases the suffering was lessened by the interference. In the other cases recovery ensued; in one after drainage for ten or twelve months; in the other the artificial opening was maintained.

A Diagnostic Symptom of Mastoid Disease.—Okunjew (*Vratch*, Nos. 48, 49) and Gabritschewski (*Vratch*, 1893, No. 52) point out that in case of mastoid disease, auscultation by means of a stethoscope applied over the respective mastoid process discloses the fact that there is impaired transmission through the bones of the head of the vibrations of a tuning-fork placed upon the vertex. —*Centralbl. f. Chirurgie*, 1894, No. 9, p. 200.

THERAPEUTIC NOTES.

Extract of Bone-marrow in the Treatment of Anemia.—Mann (*Lancet*, No. 3680, p. 599), viewing the red matter of bone as the chief agent in promoting the development of red blood-corpuscles, concluded that an extract of this substance, introduced into the human organism while in an anemic state, might act as a stimulant to the formative process, and increase the rate of production of the red corpuscles. As the tissue-forming power is more active in young than in older animals, the bones of the former are to be preferred as a source of the extract. To prepare this the heads of the long bones obtained from recently killed calves, with other portions of bone that contain red marrow, are broken into small pieces and digested in glycerin, with frequent agitation. The extraction is complete after the lapse of several days, when the extract is filtered off and is ready for use. It is red or reddish-brown in color and devoid of unpleasant taste or odor. It may be given in teaspoonful doses once or twice daily. In a series of cases of anemia of varying kind and origin in which the extract was employed encouraging results were obtained.

For the Visceral Complications of Acute Rheumatism. Jaccoud (*Wiener medizin. Presse*, 1894, No. 9, p. 339) recommends the administration of the tartrate of antimony and potassium hourly, in doses of one-twentieth grain, in mucilaginous solution. Care must be observed not to administer a narcotic simultaneously. The treatment is followed by a rapid decline of temperature, the pains subside, and even large effusions grow less. As a rule, diarrhea and vomiting result, but these should not be viewed as contra-indications, unless aggravated. The patient should be under constant observation during the continuance of the treatment.

Guaiacol in Diabetes.—Clemens (*Allg. med. Centr. Ztg.*, No. 12; *Wien. med. Pr.*, No. 10) speaks favorably of the action of guaiacol in the treatment of diabetes. The dose employed was from six to ten drops, three times a day, in a tablespoonful of milk or cod-liver oil. It was found that a distinct influence was exerted upon both the elimination of sugar and the excretion of urine. The remedy was well borne, and its use was followed by improvement in the general condition.

For Influenza.—

℞.—α-Naphthol. . . . . ℥ijss.
Magnesii calc. . . . . ℥j.
Phenacetin. . . . . ℥jss.—M.
Ft. chart. no. xx.
S.—One from four to six times daily.

Maximowicz.

The Medical News.

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THE NEUROSES.

WE are sometimes asked: What is a neurosis? Is a nervous symptom, or only a nervous disease, a neurosis? Is nausea a neurosis? Is flatulence of nervous origin a neurosis? Is epilepsy a neurosis? To all these questions, and to many others like them, we frankly reply that we do not know what is the essential characteristic of a "neurosis"; but we strongly suspect that its essence is a metaphysical quibble which has, or ought to have, no place in the science of the present day. To this a protest may arise; in fact we think that we can hear the voice of the first-year student proclaiming that a neurosis is a "functional" nervous disease. So it may be; but what is a *functional* nervous disease? We do not know, unless it be a disease that once belonged to a class frequently found in old text-books, but now "gone glimmering through the mists of things that were"—a class of diseases without a pathology, not because they had none, but because men had not yet discovered it.

Opening an old text-book (a noble one, too) of fifteen years ago, we find that the list of functional nervous diseases included epilepsy (comprising focal, traumatic, and syphilitic epilepsy), chorea, tetanus, hydrophobia, and mania after acute disease. Will anyone venture to say now that these are mere neuroses—that they are functional as distinct from organic or infectious? If not, why not?

Opening a very recent text-book (and a good one, too) we find under the head of functional nervous disease some striking and sesquipedalian distinctions. We have now the "degenerative neuroses" of which not only epilepsy but also paramyoclonus, paramyotonia, and akinesia algera are frightful examples. Next we have the "acquired neuroses," as chorea, tetanus and exophthalmic goiter. When we look critically into these refinements we are amazed. *Mirabile dictu.* We ask ourselves: Is not epilepsy acquired, as well as chorea? Does not chorea sometimes promote degeneration, as well as epilepsy? Is not tetanus due to a microbe, and chorea, probably, to some infection? Whither has the old metaphysics gone? Is there no longer any difference between a function and an organ? If, now, tetanus is due to a microbe, how is it merely functional? If epilepsy is degenerative, or produces degeneration, in what does the degeneration consist? Is it conceivable that the degeneration of epilepsy is not in the organic basis? In fact we know better in part, thanks to recent investigations into the finer histologic changes that occur in the sacred disease. It is probably as truly an organic disease as is cirrhosis of the liver. But when we come to the later degenerative neuroses, and find the class reserved for paralysis agitans, and recall how the accomplished author of these distinctions has himself laboriously endeavored to prove that this disease has a pathology that can be demonstrated under the microscope, then, indeed, do we realize that the metaphysical life has quite gone out of the term *neurosis.*

From the psychologic standpoint, too, the term must look to itself; and this applies of course to its kindred term—psychosis. Hysteria is the great example of this metaphysical conception, *i.e.*, a disease of the "mind" without organic basis, a truly functional will-o'-the-wisp; hence "protean," unintelligible, arbitrary, and generally misunderstood. But the critical studies of the modern school have proved that hysteria is a disease of fixed laws; that it accords with all things in Nature, *i. e.*, it is an entity with a certain environment, and that it is not subject to moods and changes without cause. Granted that its pathology is still part of the unsolved problem of the pathology of "mind," who will say in the modern light that it has no substantial basis?

But the worst is yet to come. We have now fallen upon the evil days of the "traumatic

neuroses." We are asked to believe that trauma (the worse the better, so to say) by shocking, banging, wrenching, twisting, dislocating, and harrying generally the delicate nerve-tissue and its enveloping cases produces a neurosis, a functional nervous disease, making a man good for nothing but to receive damages in court.

KRAFFT-EBING has given us the "psycho-neuroses." These are the primary curable insanities and their secondary incurable states. Here is an obvious incongruity. These secondary states, which include terminal dementia, are now known to present evidences of gross disease. An old dement's brain seldom comes to the dissecting-table without showing unmistakable evidence of organic changes. Who will say that with our rapidly improving technique we shall not some day be able to read the story of the psycho-neuroses in the various layers of the brain-cortex?

To conclude, we do not believe that we have such diseases as neuroses, and we do not believe that many others believe that we have them. And yet we and others continue to use the terms "neurosis" and "psychosis" in spite of our unbelief. There must be some reason for this. It may be found in the fact that these terms are convenient, and that this convenience has grown out of the very change in their significance which has here been implied. Very few writers and thinkers use the terms now to indicate what they believe to be "functional" disorders, but rather in a vague way to indicate generalized affections, all-pervading but obscure disease-entities, in contrast with localized, recognizable ones. So long as pathology has her mysteries to explore, so long will some such term, or group of terms, be admissible, even necessary. And if the medical mind will hold them at their proper value, as mere tickets or labels for packages not yet opened, we shall probably experience no greater evil from their use than an occasional neurotic or psycho-neurotic qualm of conscience (a sort of hyperesthetic aversion) when we write them down.

UNCONDITIONAL SURRENDER?

THE MEDICAL NEWS, in advocating rational revision of the Code of Ethics of the American Medical Association, proposed the adoption of a simple set of business-like rules stating in plain and terse language that this was enjoined and the other prohibited. In the rules tentatively suggested by us every injunction and every prohibition of the present Code was preserved, the phraseology being made clearer and shorter.

Quite different is the report of the majority of the Committee on Revision of the Code, which appears in the *Journal of the American Medical Association* for April 7, 1894. That report does not in the least simplify or improve the phraseology of the present Code, while it does tend to break down some of the most important safeguards against unprofessional and dishonest conduct. It has all the faults of the letter of the present Code, and none of the merits of the spirit of that document. It is an emasculated abortion, and should be promptly and indignantly cast out. We cannot now give space to all its inconsistencies and absurdities, but we will cite three examples that should suffice to condemn it utterly.

Article I of Chapter II is entitled "Duties for the Support of Professional Character." In the Code as it stands, this is an admirable chapter. The Committee has, it is true, made few changes in wording, but these few are skilfully contrived to effect tremendous alterations in meaning.

Thus, Sec. 2 prohibits advertising, open or secret. The Committee has let the prohibition stand as written—and then nullifies it by adding:

> "It shall not be considered as a violation of the spirit of this section, however, for physicians engaged in the work of medical education, either singly or associated in colleges, *or for physicians practising in hospitals, whether private or public, general or special*, to announce the fact or allow it to be announced to the profession *in the advertising pages* of strictly medical journals, or for physicians devoting special attention to one of the recognized special departments of medical practise to note the fact on *their signs or private cards*.

The words we have italicized are an absolute surrender to the "professional" (otherwise delicate and proper) advertiser.

In Sect. 3 of the same article, as reported by the Committee, an attempt is made, by the omission of certain essential words, at once to legalize the patenting of instruments by medical men, and greatly weaken the condemnation of nostrums.

We have already expressed our views upon the subject of the patenting of instruments. That subject, however, important as it is, is secondary to the nostrum-question; and we therefore call special attention to the bearing of the words omitted by the Committee in the latter relation. The Code

now says that it is "derogatory to professional character . . . for a physician to hold a patent for *any surgical instrument or medicine or to dispense* a secret nostrum, *whether it be the composition of himself or of others*. . . . It is also reprehensible for physicians to give certificates attesting the efficacy of *patent or* secret medicines, *or in any way to promote the use of them.*"

By omitting the words we have italicized, the Committee surrenders to the nostrum-makers. It removes the stigma from *dispensing* nostrums, or *promoting the use of* nostrums, or giving certificates to *patent* medicines. It substitutes a provision that physicians shall not *patent* nostrums. But nostrums are never "patented," because patenting involves publicity and publicity "gives away" the fraud. Nostrums are "trade-marked." Under the elaborately misleading phraseology of the Committee any scamp of an M.D. can enter into an offensive and defensive alliance with nostrum-makers, and not only go unpunished (as at present such fellows unfortunately do go, through our cowardice), but claim that the Code makes his conduct respectable. The Committee turns a strong and praiseworthy section of the Code into a prohibition that prohibits nothing; making it a stench and an offence in the nostrils of honest men.

It is possible, and, indeed, from the high personal character of the members of the Committee quite probable, that the majority did not realize the full effect of their tampering with this section. But that would furnish even a stronger reason, if stronger reason be possible, for the rejection of their work.

In Article II, "Of Consultations," Sec. 2, the Committee says: "No intelligent practitioner who has a license to practise from some medical board of known and acknowledged legal authority, and who is in good moral and professional standing in the place in which he resides, should be refused consultation when it is requested by the patient."

This is an unconditional surrender to the quacks and "pathists." It needs no comment.

The Committee was appointed to *revise* the Code, not to *destroy* it. The work of the Committee, however, has been destructive. If the report of the majority should be accepted, the formally promulgated ethics of the profession of medicine will be far below the standard that right-thinking and pure-minded men will set up for themselves. Honorable men will then study the Code to see what is permitted, in order that they may not do it. There is but one course open to those who wish to preserve the good repute and honor of the American Medical Association, and that is to vote down the report of the majority of the Committee *in toto*.

EDITORIAL COMMENTS.

Useless and Expensive Adulterations of Food.—We recently watched the unloading of tons of marble chisellings (from a monument-yard) into the bins of a spice-manufactory. It is doubtful if a sample of pure ground pepper or other spice can be obtained in the market. Possibly marble-dust is not particularly injurious to the human economy, perhaps the adulteration may even lessen the noxiousness of the pepper, and perhaps the gravestone-cutter is not increasing his business by selling his waste-stone to the spice-grinder. But it seems at least a stupid waste of money on the part of the community and in the interests of supposed cheapness, and one wonders why it would not be economy to make the holes in the pepper-boxes smaller.

Somewhat the same lesson meets us in reference to oleomargarin. It is estimated that about fifty million pounds of this food-product are annually manufactured in the United States. In many ways as good a food as butter in some respects, and for certain purposes superior to butter, we waste several hundred thousand dollars in taxes in the attempt to restrict its use in the interest of the butter-makers, instead of seeking to rightly utilize it as a proper food.

"Pure Refined Lard" is a trade-mark term well understood to mean the exact reverse of what the words would mean to an unregenerate philologist—*i. e.*, it means that it is not lard, not pure, and not refined—in fact, a mixture of lard-stearin and cotton-seed oil. It is probable that as a cooking-fat cotton-seed oil is just as good in many ways and surely cheaper than hog-fat. As a salad-dressing cotton-seed oil is a nutritious food, perhaps not inferior to olive-oil, and again certainly very much cheaper.

Glucose, again, when properly made is a good food, but millions of gallons of it are annually sold as syrups and honey, the public paying therefor enormous profits to the conscienceless manufacturers for their skill in hoodwinking.

So with almost every prepared food that is sold. "Grandmotherly government" is laughed at by great and wise philosophers, but while "statesmen" wrangle over partisan or peanut politics, the people are cheated out of their money because there is no public analyst or legislative safeguard against food-adulterations that are sometimes dangerous, but at least useless and always expensive.

The Medical Profession and the Pension Bureau.—Our excellent contemporary, *The Philadelphia Polyclinic*, calls attention to the work of physicians and the fitness of those appointed as examiners by the Bureau of Pensions. It is upon the findings and recommendations of the examiners that are annually spent something like one hundred and fifty millions of dollars. There can be no doubt that a large number of the appointments have

been gained through political influence, and that these appointees have often been shamelessly unfit for the position. It may be that the greater number of examiners realize that they have a duty to the Government and to the community as well as to the pensioners, but certainly not a small proportion try to err on the side of "liberality" rather than on the side of justice to the taxpayer. We have knowledge of a case in which an able-bodied man was urged by an examiner to apply for a pension, and assured that it would be easy to secure it, on the ground of a certain scar that was in no way due to military service, and that did not influence or interfere with the most perfect health. Such cases, it was said, were every day favorably passed upon by himself and his colleagues.

It seems strange that these four thousand appointments to positions of such great trust and power should be made without a word of advice either asked of or given by the medical profession. A man without medical experience, a failure as a practising physician, or a student who has just received his diploma, perhaps at a two-term commercial "medical college," importunes his Congressman or Senator and secures an appointment demanding the best medical and surgical training, the soundest judgment, and the ripest experience. It is a gross injustice to the taxpayer and to the Government, as well as to the really deserving soldier disabled in defending his country. A rule should be adopted requiring the indorsement of an applicant by a medical society of good standing.

Convalescent-Homes are most proper objects of interest to those charitably inclined, and there are entirely too few of them. There is often a long period of time after the graver dangers of illness are passed before the organism is fitted to again undergo the strains of work, physical or mental, of the battle of life. During this time the hospital is not the best place for the patient, and a change to different and less painful surroundings well accords with the growth of health and of hope. We think that it should be a systematic plan of treatment, this of transference of convalescent patients from the city hospital to the quiet, the purer air, and the brighter circumstances of convalescent-homes located in the country. A large portion of the money now being expended, and often wasted, upon the recklessly morbid overgrowth of city hospitals should be deflected to this excellent and proper extension and perfection of hospital-work. The stay in the city hospital, as at present, from the beginning to the end of sickness, is often bad for the patient and for the hospital. Every consideration—financial, medical, social—argues against it, and for the establishment of country convalescent-homes. At Summit, N. J., there is a convalescent-home that during the past few years has cared for thousands of convalescents sent thither by the hospitals and charitable societies of New York city. Donations to this perfect charity have been so poor during the past winter that it has not been able to keep open, and there is great danger that it may not be able to open this summer. Full information in regard to the home will be given at the New York office, room 505, United Charities Building. Donations may be sent to Mrs. George M. Grant, Treasurer, Summit, N. J.

Simultaneous Intra-uterine and Extra-uterine Fetation.—A case closely parallel to that detailed by Dr. Hirst in a clinical lecture published in The News of March 31, p. 346, is abstracted by the *Lancet* from the *Revista Médica de Bogotá*. The patient was a young woman who had already borne three children. She complained of pain, weight, and discomfort referred to the right iliac region, and was supposed by the physicians who saw her to be suffering from salpingitis or an incipient uterine neoplasm. After a time it became evident that she was pregnant, and at the seventh month she was prematurely delivered of an infant that lived a month. The pain in the right iliac region, however, persisted, and on examination it was discovered that, although the uterine os had closed, there were unmistakable signs of the presence of a second living fetus, which it was hoped might be retained until term. The woman was for a time lost to observation, and when again seen was evidently dying from peritonitis. Upon post-mortem examination a putrid fetus of about seven months was found in the peritoneal cavity, the uterus being quite normal.

Difference of Presumptions as to Drunkenness and Insanity.—Drunkenness may so becloud the mind as to make it incapable of doing an intelligent act, but the disability ends when the exciting cause is removed. In this it differs, according to a recent decision of the Surrogate's Court of New York County, in the Johnson will case, from insanity, which, once shown to exist, is presumed to continue until there is proof that intelligence and reason have asserted themselves. A drunkard may execute a valid instrument within a day, or even less, from a time when it would be conceded that he was incapable. In each case the question to be determined is whether at the time he was sober, or, if not, whether his mind was so affected by drink that he was not sufficiently master of himself to give expression to his real wishes. A clear mind is needed to conduct a complicated business transaction. A mind partially clouded by drink may execute a valid will.

SELECTIONS.

THE PERILS OF FOOT-BALL.

We printed in our first issue of this year a list of the accidents that had come under our knowledge as having occurred at foot-ball during the last quarter of the year which has just gone. The list, confessedly an imperfect one, though to what extent we do not know, comprised: 1 concussion of the brain, 2 concussions of the spine, 1 fracture of the thigh, 16 fractures of the leg, and 5 fractures of the arm, and in 5 cases death ensued. This roll of disaster, which we recognized might be comparatively insignificant when the enormous number of players was taken into account, we now supplement by a list of the accidents that have so far occurred in the foot-ball field (and come to our knowledge) during 1894: 1 concussion of the brain, 15 fractures of the leg, 6 fractures of the collar-bone, 1 fracture of the arm, 1 fracture of the shoulder-blade, 5 dislocated shoulders, 1 dislocated knee, and 5 undescribed cases necessitating hospital treatment, and 5 deaths have been reported. The factors

which are chiefly at work in rendering foot-ball dangerous are very numerous. Essentially a game, whether the dribbling or running code be in question, where the greatest possible muscular exertion is called into play, and where, though the highest premium may be put upon pace and skill, both strength and weight can be made to tell, it is absolutely certain that dangerous collisions must now and again occur. These dangers are more than of the game; they constitute the game, and cannot be removed without alteration in the rules. But this is not all. Foot-ball is, in particular, dangerous in accordance with the spirit in which it is played. The element of personal conflict is very pronounced in either game, and in the give and take of a scrimmage or *mêlée* loss of temper may lead to the infliction of serious injuries. We do not consider that we are taking up the position of milk-and-water alarmists, and we know that we are expressing the views of many who can justly claim consideration as athletes, when we express an opinion that it is no longer quite a sufficient reply to a protest against the dangers of foot-ball to say that thousands play it. They do, and the fact makes the danger, if a small one, a very general one, and gives to the subject almost a national importance. We hope that those papers whose more especial province foot-ball and the discussion of foot-ball rightly is, will not consider our ventilation of the subject other than reasonable. We have for several successive seasons urged that the game has unnecessary elements of danger, and we may fairly take credit to ourselves for the fact that the increased power which referees now possess, and without which undoubtedly the perils would be still more marked, was loudly recommended in our columns many years ago. We are deeply desirous that those capable of setting the public mind at rest upon the subject should take steps to do so.—*The Lancet.*

AMERICAN QUACK-CURES FOR INEBRIETY.

Further particulars have oozed out about the cases of drunkenness treated in Dundee, several people having written to say that to their certain knowledge in many instances the "cures" had only been very temporary. One of the Edinburgh lay papers has taken up the subject with commendable zeal, and has collected a number of facts intended to show the public what utter frauds these American systems are. Tyson's cure seems to be run by a company, Messrs L. B. Tyson & Co., Limited, of which a Mr. George T. Stephens is an assistant secretary and agent in this country. The latter gentleman is connected with B. W. Hair & Co., chemists, High Holborn, London, whose names will be remembered in connection with a recent prosecution, and who in the present instance, after the first article appeared in the Edinburgh paper, wrote an extraordinary reply to it, in which he tried to explain away the fact that Tyson's agent in Australia was fined under the Colonial Poisons Act for selling without a license a poisonous drug. As we have stated before, a committee of rabid teetotallers in Edinburgh has been gathered together to boom the great discovery in that city; they are to commence work, we believe, this week, if enough sufficiently debased drunkards can be obtained to make it worth while. Some curious details, also, have been published lately about a "Glasgow Metabolic Institute," run by an A. J. Currie, M.D., Cincinnati, Ohio, in conjunction with a Dr. A. Nairne, who is entered in the Medical Directory as L.R.C.P. Edinburgh, 1874, and then in brackets "Currie and Nairne." Dr. Nairne is further stated to have been one of Currie's cures, and his position in connection with an unregistered practitioner is at present, we believe, under the consideration of the Royal College of Physicians. Several cases reported at the time with a flourish of trumpets as having been cured at this Metabolic Institute lapsed in a few days, as we only could expect. It is not known by which method "Dr." Currie treats his patients—some say that it is Tyson's, others Keeley's. The doctor himself does not seem to mind which it is called by, and we do not suppose it really matters. Keeley's people in London have however, written to say that it is a fraud to say that the metabolic cure is the same as theirs, but that they intend shortly to allow the Glasgow people the opportunity of the only true and genuine cure.—*The Medical Press and Circular.*

STATISTICS OF THE ATTENDANCE OF AMERICAN MEDICAL COLLEGES.

Whatever may have been the fact as to the number of students of medicine at some remote period, it has not been true for the last half-dozen years or more that the number is (in relation to population) "relatively diminishing." At the sessions of 1885 the total attendance was 10,891—9245 regular, 1032 homeopathic, 614 eclectic. During the sessions of 1893 the attendance was 18,910—16,759 regular, 1410 homeopathic, 741 eclectic. These figures show gains in eight years of 73.6 per cent. in the total attendance—81.2 per cent. for the regular students, 30.6 per cent. for the homeopathic, 20.6 per cent. for the eclectics—an average annual increase of 9.2 per cent. during the period. The average annual increase of population during the same period was less than 2.5 per cent. So that instead of there being a diminution of students of medicine in relation to population, there is a relative increase nearly four times greater than that of population. As a matter of practical interest to the profession, it may be noted that there is an average increment of nearly 6000 new home-made physicians every year, and that while the population increased 24.8 per cent. during the decade 1881–1890, the number of newly-graduated physicians increased over 50 per cent. during the same period; last year, 1893, the increase was a trifle over 8 per cent.—*Journ. Amer. Med. Assoc.*

REVIEWS.

A Practical Treatise on Medical Diagnosis for Students and Physicians. By John H. Musser, M.D., Assistant Professor of Clinical Medicine in the University of Pennsylvania. Illustrated with 162 woodcuts and 2 colored plates. Philadelphia: Lea Brothers & Co., 1894.

The current works on Medical Diagnosis are of an unusually high average. In a state of sublime ignorance and in blissful unconsciousness of its depths, a man may write such a work as the *Microscopical Diagnosis* of

Ephraim Cutter, but such a condition of mind is happily rare. Diagnosis is not a tempting subject for mediocrity, and the teachers who have of late years tackled it have been men of accurate training and of wide experience.

The books on diagnosis are of two classes: those of Vierordt, Gibson and Russell, Von Jaksch, Eichhorst, Guttman, Spehl, and others, are in reality handbooks of methods of physical examination; while Da Costa's standard work, the best illustration of the second group, embraces as well the special diagnosis of the various disorders. In this second category comes the work before us. With a long experience in teaching, and at an age and occupying positions in which his personal relations with students are still clinical, Dr. Musser has had exceptional opportunities of fitting himself for the task of writing a *Diagnosis*. The work is in every respect worthy of his well-won reputation, and is a valuable addition to our text-books. Method, so essential in the investigation of disease, is evidently the motto of the author, and both in the section on General Diagnosis and in the chapters devoted to a consideration of the special disorders, "the data obtained by inquiry" and "the data obtained by observation" are discussed in orderly sequence and with an insistence which will be itself valuable to the student. An illustration may be given of the way in which the author deals with an important subject in each division; thus sixteen pages are devoted to a general consideration of Fevers—the temperature in health, the variations, the modes of determination, pathologic variations, types of fever, onset, course, recrudescence, symptoms of fever, subnormal temperatures, diagnostic significance of fever. In every one of these sub-sections the question in hand is considered in a thoroughly practical manner and from the standpoint of large experience. The page and a half on the cerebral symptoms of fever, with a description of the differences between the ataxic state and the typhoid or adynamic state, so often confounded, are particularly clear. In the special disorders we turn to Typhoid Fever, as a sort of touchstone indicating a teacher's position. Ten pages are devoted to it, illustrated by seven excellent charts. The bacillus of Eberth is regarded as the cause; but it might have been well, perhaps, had fuller details been given on bacteriologic diagnosis, or, at any rate, some allusion made to the well-recognized difficulties in its differentiation from certain other forms. A note, too, might have been added on the investigation of the bacilli in the stools and urine. But the section, as a whole, is excellent, and no important points are overoverlooked.

A diagnosis should be pictorial, and though the charts are excellent, the figures are scarcely equal to the text, and in subsequent editions many additional ones should be added. There are certain diseases in which illustrations are of greater value than descriptions in giving a student an idea of the affection. In the matter of illustrations, American publishers are still far behind those of France and Germany. In the work before us the figures in the frontispiece, illustrating the various forms of pathogenic bacteria, would have been very much better printed in colors in the text.

The work is compact and well printed, the paper of good quality, and the proof-reading has been done with exceptional care. And, most important, there is a good working index, neither so elaborate as to indicate that it was done by contract-labor, nor so meager as to suggest that it was committed to a friend. The accuracy, the freshness and clearness of description of symptoms, and the presentation of all subjects from an advanced modern standpoint will insure for the work a hearty reception at the hands of students and physicians.

An American Text-book of the Diseases of Children. Including Special Chapters on Essential Surgical Subjects: Diseases of the Eye, Ear, Nose, and Throat; Diseases of the Skin; and on the Diet, Hygiene, and General Management of Children. By American Teachers. Edited by Louis Starr, M.D., assisted by Thompson S. Westcott, M.D. 8vo., pp. xiv, 1190. Philadelphia: W. B. Saunders, 1894.

A critical review of this work within the ordinary limitations of space is at once a difficult and a delicate task. The reason becomes apparent when it is stated that the book is made up of a hundred separate articles prepared by sixty-three different writers. The text is thus a little variable in quality, but even a single author is likely not to write equally well on all subjects, while the impress of the editor is appreciable in all parts of the work. A single instance will illustrate this point. Thus, Forchheimer, in closing an interesting article on Dentition, declares lancing of the gums useless for the relief of symptoms and for facilitating or hastenting the eruption of the teeth, and as harmful and only to be practised for the relief of surgical accidents; but the editor in a foot-note qualifies this expression by pointing out that experience has demonstrated the utility of the use of the lancet in appropriate cases.

The list of contributors includes many names well known in pediatrics as well as in other departments of medicine. Some of the articles are worthy of special mention. Matters appertaining to the clinical investigation of disease, and the general management of children, together with the subjects of feeding, bathing, clothing, and sleep are discussed in the Introduction in a masterly way by the Editor. The article of Osler on Tuberculosis is a perfect one, and faithfully portrays the present status of knowledge upon this important subject. Shakespeare's article on Cholera may be viewed as an authoritative statement of the prevailing conception of that disease. Da Costa contributes a characteristically lucid and interesting description of Rheumatism. Vaughan's article on Diarrheal Diseases is a scientific exposition of a most important subject. In it he considers milk-infection in its acute and subacute forms. The therapeutic indications under these conditions obviously are the withdrawal of milk from the dietary and the evacuation from the gastro-intestinal tract of toxic substances of all kinds by means of cautious irrigation. Ashhurst discusses Diseases of the Cecum and Intussusception in a conservative and scholarly manner. He expresses the opinion that removal of the vermiform appendix after recovery from an attack of acute appendicitis in which suppuration is believed to have occurred, is, as a rule, unjustifiable as a means of preventing recurrence of the disease. He manifests a preference for the word laparotomy rather than celiotomy to designate abdominal section.

A word of commendation for the execution of the neurologic division of the work must not be omitted. Although reference is made to an agreement at the last meeting of the American Pediatric Society to substitute the designation "ileo-colitis" for "dysentery," the latter word is retained for convenience' sake. The section on Diseases of the Blood is fairly complete, but we fail to find any reference to the affection described by v. Jaksch as Anæmia pseudo-leukæmica infantilis. Exophthalmic goiter is likewise not described. In The News of April 16, 1892, p. 430, two cases of this disease are reported in girls fifteen and sixteen years old respectively, in whom menstruation had not appeared; and at a recent meeting of the New York Neurological Society a case was reported in a girl of twelve years. In the illustrations accompanying the article on hereditary ataxia two cases are shown having "increased reflexes and ankle-clonus," and in the text reference is made to perhaps the same two cases, in which the knee-jerk was greatly exaggerated and ankle-clonus was present. It is now almost universally recognized that absence of knee-jerk is distinctive of the hereditary ataxia of Friedreich, and that cases in which this reflex is present or exaggerated belong in another classification.

The book contains a moderate number of illustrations, together with twenty-eight plates, many of which are colored. The former are mostly only of ordinary merit, and are not numbered consecutively, the enumeration of individual articles being distinct. Of the plates, some are excellent, but many are disappointing. Taken all in all, however, we cannot speak of the success of this splendid work in terms of praise too high, and the Editor and his collaborators are to be warmly congratulated on the outcome of their mutual efforts.

CORRESPONDENCE.

ACETANILID AS A SURGICAL DRESSING IN VETERINARY PRACTICE.

To the Editor of The Medical News,

Sir: Attracted by Dr. Francis Harrell's article in The News relative to acetanilid as a surgical dressing, I was prompted to use it as a surgical dressing in the hospital of this ranch (veterinary), and the results have been most happy.

The first case in which it was given a trial was certainly a crucial test—it was upon an extensive fistula of the superior cervical region ("poll-evil") of long standing in a Percheron colt four years old, which had been exsected about ten days previous to my reading the article, and was then suppurating very profusely from the entire wound-surface, about ten inches in length and from two to six inches in depth.

The wound was carefully washed with a 50 per cent. solution of hydrogen dioxid, and packed thoroughly with acetanilid. The following day there were not two drams of pus in the cavity, and at the termination of a week hardly a drop of pus could be discovered. The entire wound healed kindly fifteen days from the commencement of the acetanilid dressing.

I have since used acetanilid after dissecting out three fistulæ of the superior scapular region ("withers"), in one of which immediate union was obtained; in the remaining two slight suppuration continued for a few days only.

In all, I have used acetanilid in about twenty-five surgical cases, with the happiest results; in fact, in all my minor surgical cases only ordinary antiseptic precautions in cleanliness and the acetanilid dressing have resulted in healing by first intention, a result in veterinary surgery otherwise difficult for me to obtain, even under most thorough preparation and scrupulous cleanliness.

I am indebted to the contributors of The Medical News for a number of valuable suggestions easily applied to veterinary medicine; but this of Dr. Harrell I regard as the most valuable of all, and I extend my thanks to him, adding also the expression of satisfaction that The News comes to me every week.

Very cordially,

M. E. Knowles.

Veterinary Hospital, Bitter Root Stock Farm,
Hamilton, Montana.

QUININ IDIOSYNCRASY.

To the Editor of The Medical News,

Sir: The case of quinin idiosyncrasy reported by Joseph L. Hancock, M.D., of Chicago (The News, March 10, 1894, p. 271), reminds me of a similar case seen a short time ago. The patient, a married lady about thirty years old, "tall, with a dark complexion and of rather slight build," was suffering from an attack of intermittent fever. She informed me of her idiosyncrasy, and I prescribed cinchonidin sulphate in three-grain doses. Two doses produced all the symptoms described by Dr. Hancock—erythema, with burning and itching over the entire body, especially severe on the hands and arms, and in addition a severe and distressing palpitation of the heart, with dyspnea. These symptoms all disappeared in three or four hours, leaving no unpleasant effects. Respectfully,

W. J. J. Paris.

Elizabethtown, Ill.

GALVANO-PUNCTURE FOR HYPERTROPHIED TONSILS.

To the Editor of The Medical News,

Sir: Having used the galvano-puncture for hypertrophied tonsils at least five hundred times, permit me to state that I have never had a patient suffer severe pain. From two to four sittings constituted the limit for each tonsil. I never used over from a 4 to a 10 per cent. solution of cocain, and I have never had a bad result from the operation. I consider it bloodless.

Very truly yours,

Frank P. Hudnut,
Ex-Attending Surgeon Throat and Nose Department,
Long Island College Hospital.

Needham, Mass.

NEWS ITEMS.

The Association of American Physicians will hold its ninth annual meeting at Washington, D. C., on May 29, 30, and 31, and June 1, 1894. The following program has been prepared:

President's Address; by R. H. Fitz, Boston. Some Researches on the Significance of Albumin and Casts, especially in those past Middle Life; by Frederick C.

Shattuck, Boston. Some of the Chemical and Bacteriological Characteristics of Milk; by Thomas M. Rotch, Boston. The Chemical Products of the Anaërobic Putrefaction of Pancreatic and Hepatic Tissues, and their Effects upon the Tests for Morphin; by Victor C. Vaughan, Ann Arbor. The Effect of Various Metals on the Growth of Pathogenic Bacteria; by Meade Bolton, Baltimore. Dr. S. C. Martin's Researches on the Bacteria of Vaccinia; by Harold C. Ernst, Jamaica Plain. Note on the Observation of Malarial Organisms in Connection with Typhoid Fever; by W. Gilman Thompson, New York. Experiments in Artificial Melanosis; by George Dock, Ann Arbor. The Mild Character and Diminished Prevalence of Syphilis and the Infrequency of Visceral Syphilis; by John H. Musser, Philadelphia. A Case of Osteomalacia; by George Dock, Ann Arbor. The Treatment of Typhoid Fever; by Samuel A. Fisk, Denver. The Treatment of Certain Symptoms of Croupous Pneumonia, particularly in Adults; by Beverley Robinson, New York. A Study of the Temperature in Cerebral Apoplexy; by Charles L. Dana, New York. Six Cases of Traumatic Headache; by Charles F. Folsom, Boston. Tetany in America; by J. P. Crozer Griffith, Philadelphia. Clinical Report of Two Cases of Raynaud's Disease; by Frederick P. Henry, Philadelphia. A Case of Mitral Stenosis, with Great Hypertrophy of the Right Ventricle; Death from Hemoptysis; by A. McPhedran, Toronto. Stomatitis Neurotica; by A. Jacobi, New York. Gastro-enteric Rheumatism; by Henry M. Lyman, Chicago. Lead-Palsy in Children; by Wharton Sinkler, Philadelphia. A Report of the Ultimate Results obtained on Experimental Eye-tuberculosis by Tuberculin-treatment and Preventive Inoculation; by E. L. Trudeau, Saranac Lake. Modification—Temporary and Permanent—of Physiological Characters of Bacteria in Mixed Cultures; by Theobald Smith, Washington.

Smallpox in Chicago.—The Chicago Commissioner of Health reports that during the year 1893 there were 140 cases of smallpox in the city of Chicago. Cases occurred during every month of the year except March and May. Thirty-five cases occurred during November and 66 during December. There was a total of 25 deaths, none of which occurred in any case that had been previously vaccinated. But few of the cases could be traced to their origin. Some were, however, traced beyond the city and others to immigrants as the most probable source of infection; nevertheless, early in the summer 3 cases were found within two days in three different sections of the city. Careful and extended investigation leads to the belief that during the early summer there were several cases of smallpox of mild character among people who mingle continuously with the public, the disease being so mild as not to demand the attendance of a physician. During the year the disease occurred at 97 different points. From none of these did cases of secondary infection occur after the premises had been disinfected. During January of the current year there were 188 cases, with 29 deaths. Seven of the latter occurred outside of the hospitals and were of hemorrhagic type. Not one of these 7 had been vaccinated, and but few of the 29 fatal cases presented any evidence of successful vaccination. In the month of February there were 233 cases, with 55 deaths. These occurred largely among adults of the lodging-house class, who were greatly debilitated by dissolute habits and dissipation. The death-rate among the unvaccinated was 50 per cent., and was much greater among adults than among children. The disease was found at 93 different points, all of which were thoroughly disinfected. During the month of March there were 305 cases, with about 95 deaths. Vaccination has been pursued with intelligence and vigor. A rigorous house-to-house inspection has been made, with the aid of the police force, in search of concealed cases, but none was found. Children in public and parochial schools have all been revaccinated.

Cases of smallpox are also reported from Chattanooga, Tenn.; Kalamazoo, Mich.; San Antonio, Tex.; Brooklyn, and New York City.

American Medical Association.—The Committee of Arrangements announces that the rate of fare for tickets from Missouri River points, including Sioux City, Council Bluffs, St. Joseph, Atchison, Leavenworth, and Kansas City, to San Francisco and return *via* the Trans-Continental roads, at the time of the meeting of the American Medical Association, will be $65.50. From St. Louis, Cairo, Memphis, and New Orleans, the rate will be $77.50. The going trip must be made within fifteen days from the date of sale of tickets, and the return trip within fifteen days from the day upon which the tickets are signed in the presence of a railroad agent, but in no event later than July 15th. Within the State of California the fifteen-day limit is ignored on both going and returning trips, *i.e.*, the holders of tickets are at liberty to move at will within the State of California within the life of the tickets, and the fifteen-day limit returning is not enforced west of the terminals at Portland, Oregon, and El Paso. If the Shasta route between San Francisco and Portland is passed over on either going or returning trip from Missouri River, St. Louis, or Chicago, the rate will be $15 greater. Efforts are being made to obtain a similar reduction in rates on the Eastern railroads.

The Late John H. Rauch.—At a meeting of the Philadelphia County Medical Society, held March 28th, a minute was adopted expressive of great sorrow at the sudden death of Dr. John H. Rauch, of Chicago, lately Secretary of the Illinois State Board of Health, "a man whose interest in the cause of medical education, and whose efforts in increasing the efficiency of the medical profession and maintaining its dignity and honor, have rendered incalculable service to the public."

Cholera at Constantinople.—It is reported that cholera of a most malignant type has broken out in Constantinople, and is spreading with alarming rapidity. The disease had been prevalent in the poorer and most crowded quarters, but it has now invaded the districts in which the better classes reside. A few cases of cholera are also reported from Belgium.

Dr. Hurlbert Agnew, of Philadelphia, died on April 6th at the age of thirty-two years. He was a graduate of the University of Princeton and of the Medical Department of the University of Pennsylvania. He was a cousin of the late D. Hayes Agnew.

Ollivier, the well-known French pediatrist, died recently in Paris at the age of sixty-four years.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

BRIGHT'S DISEASE IN CHILDREN.[1]

BY CLARENCE KING, M.D.,
PHYSICIAN TO THE CATTARAUGUS COUNTY ALMSHOUSE AND HOSPITAL, MACHIAS, N. Y.

BRIGHT'S disease,[2] as you all well know, is a structural disease of the kidneys, either inflammatory or non-inflammatory in character, generally accompanied by dropsy, and the presence of albumin in the urine in greater or less amount. It was first accurately described pathologically by Dr. Richard Bright in 1827, and has received much careful investigation since then, but with the addition of few material facts. Several distinct forms of the disease are recognized, differing widely in many particulars, but in other respects retaining essentially the same clinical characteristics.

Great discrepancy is manifested in the use of the different generic terms employed to designate these various disorders of the kidneys. Formerly the terms albuminuria and Bright's disease were used synonymously, but it is now well known that albumin may appear in the urine from other causes than structural kidney-disease. Thus, for instance, we sometimes find albumin in the urine in typhoid fever, in diseases of the heart, or following the use of certain drugs, as salicylic acid, or the ingestion of an exclusive albuminous diet for some time. It is true that Bright's disease has albuminuria as an almost constant symptom, but unless there are structural changes in the kidneys no case of albuminuria can properly be called Bright's disease. Again, we find in the writings of some of our leading authorities the terms nephritis (without qualifying adjective) and Bright's disease used interchangeably. Da Costa has described a simple inflammation of the kidney, occurring mostly in old men, as the result of cold, which is ushered in by chills, high fever, and great pain in the renal region, generally of one side. These symptoms are soon followed by vomiting, and at times diarrhea and retraction of the testicle, with or without hematuria or albuminuria, but unaccompanied by dropsy, and generally terminating in resolution in about two weeks, in other cases leading to suppuration. I cannot believe that such cases are very rare, as I have encountered at least two of the kind within twelve months, although they both occurred in young adults. It is manifestly improper to call these cases Bright's disease, as this would be extending the term beyond its proper limits and including pathologic conditions not embraced by the original description of Bright.

This disease, like many others, may be either acute or chronic, primary or secondary. In childhood by far the greater number of cases occur secondarily to scarlet fever; later in life the affection is generally primary. In the adult the acute form of the disease is seldom met with except when it occurs as a complication of and secondary to pregnancy, but in childhood the acute is many times more common than the chronic form. Holt maintains that Bright's disease is not rare in infants, and if physicians would make it a practice to examine the urine of their young patients more often many obscure symptoms occurring in the course of other diseases could be easily explained. Undoubtedly exposure to cold and wet is also sufficient in some cases to produce it. Goodhart, of London, suggests that exposure may play a more prominent rôle in the causation of the disease in childhood than is generally supposed. It is possible that many cases may occur from this cause which are never recognized as such, and recovery take place or a fatal termination follow which is assigned to other causes; and the kidneys never being suspected, the diagnosis is not corrected by the autopsy. In infants the primary symptoms point more particularly to the brain or the digestive system, thus making an error of diagnosis easy. Bright's disease is sometimes produced by the poisons of other diseases circulating in the blood, as that of measles, diphtheria, pyemia, or pneumonia; or it may arise from poisoning with phosphorus or arsenic, or from cantharides, or it may occur intercurrently with pulmonary tuberculosis or lardaceous disease. However, all these are much less potent factors in producing the disease in children than scarlet fever and exposure to cold or wet.

We are all more or less familiar with the various

[1] A paper read before the semi-annual meeting of the Cattaraugus County Medical Society, November 14, 1893.

[2] I consider the term "Bright's disease" very unfortunate, as it expresses nothing in regard to the nature of the disease, yet I have chosen to retain it in lieu of any other, as it is the only term which usage has applied to the pathologic conditions covered by this paper. We need a new term, yet it would be difficult to frame one exactly synonymous with "Bright's disease," as this embraces so many essentially different forms of nephritis (but not all of them, as I have shown in the text of this article), and is attended by such a variety of symptoms, none of which is constant.

signs indicating Bright's disease in the adult, but in infants the disease is often attended by symptoms which are very irregular and misleading. Thus, in some cases, dropsy is not a prominent feature at any time during the disease, and generally it is absent entirely during the first few days. Nervous symptoms are frequently conspicuous, and often the first indication the mother has that her babe is sick is a convulsion. By careful inquiry we are sometimes able to ascertain that this was preceded by restlessness and irritability, by slight pyrexia and scanty secretion of urine. In other cases gastro-intestinal irritation, as manifested by obstinate vomiting and diarrhea, is the principal feature and serves to divert attention from the real seat of the malady. Again, a high fever, with rapid pulse, may usher in the disease, or rapid respiration with dyspnea, independently of pyrexia, may cause us to suspect the lungs; these, however, upon careful examination are found to be sound. I allude to these irregular initiatory symptoms for the purpose of calling attention to the importance of a careful examination of the kidneys in all cases of convulsions, persistent gastro-intestinal disturbance, or unusual prostration without obvious cause.

In older children the symptoms of the disease approach more nearly those of Bright's disease in the adult. Following some exposure to cold or an attack of scarlet fever the child becomes ill and may have a moderate elevation of temperature. This is usually not sufficient to excite notice, but sometimes it is accompanied by headache and vomiting and the child is taken from school. Convulsions may occur at this time, but they are much more rare as initiatory symptoms in children than they are in infants; later in the disease, especially if proper treatment has not been followed, convulsions are frequent. The amount of urine passed is diminished in nearly every case, although the decrease may be so small as to escape notice unless the total amount for twenty-four hours is collected and measured; in other cases the urine is nearly or entirely suppressed. An examination of the urine shows it to contain albumin, generally in great quantity, and the microscope reveals the presence of blood-discs. In color and specific gravity it varies greatly according to the quantity of urine passed and the amount of blood which it contains. Casts are also present, frequently in great number, mostly of the epithelial or granular variety. Dropsy generally develops early and increases in amount. It is first noticed about the face, after which the body and extremities become edematous, sometimes to such an extent as to make the wearing of the ordinary clothing impossible, while the face is enlarged and changed beyond recognition. With these symptoms we find pallor and dryness of the skin, an accelerated pulse, which is frequently intermittent, and the heart-sounds muffled and indistinct. Some authors believe that dilatation of the left ventricle is common, which, however, in some cases is only temporary, while in other cases it may be permanent or become the direct cause of death. Great restlessness, disturbed sleep, and even delirium occasionally occur in the Bright's disease of childhood, as likewise of infancy, and may contribute to a fatal issue by inducing exhaustion. All these symptoms vary greatly in severity in different cases, and their association in different degrees is susceptible of an almost infinite number of combinations.

Before proceeding to a consideration of the treatment of the disease as it occurs in childhood, let us review the clinical features by the narration of a case:

A boy, nine years old, strong and healthy, had never had scarlet fever or any severe disease. One day, while running and jumping, he became tired and sweaty and sat down to rest in the open air. During the next day or two he complained of feeling tired and lame in all his muscles, but especially those of his back and sides, and his parents thought he had strained himself by jumping. This soon passed away, but was followed a week later by dropsy of the face and hands, vomiting, and headache, both occipital and frontal. His parents then consulted a physician, who prescribed for him, but the dropsy continued to increase, and by the end of another week had involved the whole body, face, and limbs, and he took to his bed. Up to this time he passed a moderate amount of urine of a very high reddish-brown color. His bowels were somewhat constipated. He had a dull, heavy pain in the lumbar region and also through his bowels, but the headache was less. Soon after taking to his bed he began having convulsions, and had twenty-nine in about ten hours, the majority of only moderate severity. He became semi-conscious only between the convulsions, and tossed and moaned a great deal. I saw him for the first time on the day of these convulsions. As he had then passed no urine for twenty-four hours, I introduced a catheter and drew off about two ounces of very dark urine, which, upon boiling, threw down a deposit of two-thirds its bulk. I advised a hot pack to induce perspiration, to be followed by flaxseed-poultices over the kidneys. I also advised a cathartic and an opiate. The boy had but one more fit after this and soon sank into a quiet sleep, from which he awoke four hours later perfectly conscious. About a week afterward he began again to have convulsions, and I was called and given charge of the case. I found him nearly the same in all particulars as when I saw him before; his fits, however, were not so severe, and there was a longer interval between them. The urine was somewhat increased in quantity, but continued high-colored, almost brown, and contained much albumin. He complained of being sore and lame in one shoulder and side and through his bowels. I instituted the same treatment as before, and directed him to drink freely

of water and to have an exclusive milk-diet. Under this treatment he improved somewhat, the urine increased in quantity, became of better color, and contained less albumin; the dropsy also diminished. Finally, a diarrhea set in, which was accompanied by severe griping whenever his bowels moved, and morphin was required to give him any rest. Notwithstanding our efforts to check this diarrhea it persisted until his death, about a week later and about six weeks from the onset of the disease. His mind was perfectly clear to the last and his dropsy much diminished. His urine, however, while it varied within narrow bounds from day to day, continued albuminous and of a deep-red color from admixture of blood.

There is probably no disease that requires more care and judgment in its treatment than acute Bright's disease. Being universally recognized as a very serious affection, the tendency is toward active treatment by drugs, and this often means increased mischief to the kidneys. At least three important fundamental principles underlie the successful treatment of this disease: 1, to remove the transuded fluid from the tissues and cavities of the body, together with those products of destructive metamorphosis which are usually excreted by the kidneys, but which, owing to their diseased condition, are retained in the system; 2, to restore the functions of the kidneys to their normal condition; and, 3, to do no further injury to the already damaged organs. Many of us have undoubtedly striven assiduously in many cases to carry out the first two indications, but have neglected to heed the third. And what has been the result?

Ordinarily Bright's disease is an inflammatory disorder. Indeed, it is a question if every case of Bright's is not inflammatory at some stage. A cardinal axiom of medicine, as of surgery, is that an inflamed organ requires rest and not stimulation. Hence, when the kidneys are inflamed, any treatment which stimulates their excretory function, or which increases their blood-supply, cannot fail of doing harm. During this stage I believe the best results will follow the stimulation of *other* organs to do the work normally required of the kidneys, so far as they are able, together with restriction of diet and the use of bland diluents. So long as the patient has fever, a rapid pulse, and pain through the loins and back, we may know that the kidneys are in a state of engorgement, if not actual inflammation, and we had better let them alone. The presence or absence of blood in the urine can be no trustworthy guide to our treatment. Dickinson in his valuable work on *Albuminuria*, in speaking of scarlatinal nephritis, says: "The worst cases are those in which no blood makes its way into the urine." But blood when present in quantity is an additional indication of engorgement, and calls for delay in the use of active diuretics.

During the inflammatory or congestive stage the urine is scanty, and as a result dropsy develops, often with symptoms of systemic poisoning. Here, obviously, we should seek to remove the cause by inducing a vicarious discharge of water from the economy, which at the same time will carry away some of the retained poisons. There are two principal channels by which we can do this—by the skin and by the bowels. For purgatives we may employ croton-oil, elaterium, jalap, or Rochelle salts, according to the urgency of the case. To induce perspiration we can make use of pilocarpin, liquor ammonii acetatis, or pulvis Doveri. By far the best way, however, is by the use of the hot pack, or prolonged hot-water or vapor baths. A convenient way to give a vapor bath is to seat the patient, stripped of his clothing, on a stool, and envelop him to the chin in a heavy blanket, which shall reach to the floor on all sides. Under the blanket place a pail of water, and drop one or more hot bricks into it, as required to produce steam sufficient to fill the blanket. If the patient is unable to leave the bed, we can still make use of the vapor bath. Water can be boiled over an oil-stove or a large lamp placed on the floor beside the bed, and the steam conducted beneath the covers by means of a tube made by rolling up a piece of builders' paper.

In case eclampsia has developed, or seems imminent, we may have to resort to chloral hydrate, morphin, or chloroform. On theoretic grounds I would object to morphin, as tending to lock up the secretions, which we are seeking to increase. It is very important in these cases of uremia that the foregoing treatment be promptly instituted and thoroughly carried out, whatever other treatment may seem called for. Some cases may demand stimulants to tide over this crisis, despite the fact that alcohol is an irritant to the kidneys, but they should be used cautiously and withdrawn as soon as possible.

As soon as the stage of renal engorgement is passed diuretics are indicated. These, following Smith, we may divide into three classes: (1) those which act by direct stimulation of the secreting structure of the kidney; (2) those which increase the amount of water in the bloodvessels; and (3) those which increase the general vascular tension. The first class includes the salts of potassium, squills, spirit of niter, cubebs, etc., and can be, in my opinion, discarded with advantage in nearly every case of acute Bright's disease. In the chronic form of the disease they may be admissible and, possibly, in some cases of acute Bright's, after the stage of engorgement has subsided, when we may choose to assume the risk of inflicting further damage upon

the kidneys for the sake of obtaining prompt diuresis to help tide over some critical period.

The second class includes a single substance—water, either plain or alkaline. Drinking freely of water increases the bulk of the urine without causing any irritation of the kidneys, but, on the contrary, allays irritation by diluting the urine. This is accomplished, according to Professor A. H. Smith, by a "process of simple transudation without action of the epithelium, and the effect is soothing, as it washes away irritating material, which would otherwise linger in the half-occluded tubules." If the urine is highly acid, one of the natural alkaline waters may be used with advantage, or an alkali, preferably a carbonate, added to pure water. A patient with Bright's disease in any stage should always be urged to drink freely of water, and the more scanty the urine the more necessary does this become. This will never produce or prolong an inflammation of the kidneys, as the effect is like a soothing lotion to an inflamed surface.

Digitalis is the type of the third class of diuretics. Formerly this drug was used indiscriminately in all cases, but now it is being restricted somewhat in its use. During the stage of active inflammation we should not employ drugs of this class, which includes, beside digitalis, strophanthus and the salts of caffein, as in this state of the kidneys the indication is to lessen vascular tension rather than to increase it. When, however, inflammation is absent, digitalis forms one of our most valuable and harmless means of increasing the urinary secretion. I have frequently used digitalis in combination with the citrate of caffein in the different forms of kidney-disease, and have been pleased with the effects produced.

Diuretin is another drug recently brought into notice as a diuretic, but I have never made use of it, and therefore offer no opinion of its merits. It belongs in the first class of diuretics.

The treatment of the uremic symptoms is sufficiently well set forth in the foregoing paragraphs. The bromid of potassium or sodium, either with or without chloral hydrate, may have some controlling influence on the convulsions, but it does not appear to afford much relief in uremic headache. The same treatment by depletion which we employ for the relief of uremia is also the proper treatment for the dropsy of this as well as of other diseases. The ingestion of fluids should be restricted and the bowels, skin, and kidneys stimulated to increased activity. But we should always have regard for the crippled state of the kidneys and employ the stimulating diuretics only in the absence of engorgement. Paracentesis and acupuncture are seldom, if ever, called for and are always attended with danger.

The diet in Bright's disease should consist entirely of milk if it can be taken in sufficient quantity to properly nourish the patient. If milk is not well borne it may be predigested. Sometimes buttermilk can be taken when sweet milk cannot. Koumyss and other foods made from milk can also be used, either alone or alternately with milk, to give variety to the diet. The white of an egg stirred in the milk makes an important addition, if the loss of albumin from the system is great, as indicated by its presence in great quantity in the urine. Milk contains alone sufficient albumin to replace any ordinary loss in this way, besides its other important constituents, all of which are easily digested and leave but little residue in the bowels. Milk is also diuretic by virtue of the water which it contains, and is, therefore, a great aid to our other treatment. When convalescence is fully established we may add other articles to the dietary, beginning with the various animal broths and increasing the amount and variety gradually. Above all we should use decision in treating these cases of Bright's disease, especially with regard to diet, and should not fail to impress the parents or friends of the necessity of a strict compliance to orders.

GASTRO-INTESTINAL HEMORRHAGE IN THE NEWBORN.

By W. B. KONKLE, M.S., M.D.,
of Montoursville, Pa.

In a white female infant born at noon, March 8, 1893, gastro-intestinal hemorrhage manifested itself on the evening of the following day, first by hematemesis, and during the twenty-four hours thereafter by several copious evacuations of blood from the bowels, the depletion occasioning a condition of profound shock. The accident could be attributed neither to inherited diathesis nor to dyscrasia, to circumstance connected with birth, to unusual feature of body, nor to neglect or impropriety of care. The treatment consisted in the administration, by the mouth, of ergot and vegetable astringents, and in the general application externally of dry heat. The child recovered rapidly and completely, a year having since elapsed, during which no incompetency of the digestive system has been discernible, nor any other untoward symptom exhibited permitting of any association whatever with the grave mishap cited.

The utter absence of tangible cause in this case and in others of the same class renders their investigation and explanation in the domain of theory necessary and interesting. Eliminating then, from this discussion, those cases of *melæna neonatorum* to which may be assigned immediate causes like hemophilia, syphilis, and gastric ulcer, to what adequate factor may we refer that list, proportionately numerous, as testified by the results of post-mortem examination, for the existence of which no

such palpable interpretation is available? The prevailing opinion among writers on the subject is that in these otherwise inexplicable instances the hemorrhage is due to congestion of the gastro-intestinal tract. Vogel, quoted by J. Lewis Smith in his exhaustive research of the subject (*American System of Obstetrics*), while clearly asserting the occurrence of increased arterial pressure in the mesenteric system, also points significantly to the closure of the umbilical vein as a possible cause of congestion. Loranchet, quoted from a French journal (*American Journal of the Medical Sciences*, January, 1894), considers a slow and progressive refrigeration of the body as the operative influence effecting a passive congestion. Indeed the dominant idea seems to be that the congestion, the presence of which is unanimously conceded, assumes preëminently the passive or venous form. That there obtains in these cases an overstrained condition of the capillary system of the surfaces involved will likely be acknowledged upon the most superficial reflection. But whether this strain be produced by an augmentation of the *vis a tergo* or by a suspension or reversal of the *vis a fronte*, whether due to an increase of active arterial tension or to the development of passive venous obstruction, constitutes another problem.

To my mind the congestion cannot be venous. To tie a vein is to empty it on the cardiac side of the ligature. The tying of the umbilical cord, instead of engorging the portal circulation should, on the contrary, unburden it commensurately with the amount of blood that formerly was thrown into its current through the umbilical vein. On the other hand, to tie an artery is to produce turgescence on the cardiac side of the ligature. Hence constriction of the umbilical cord tends immediately to increase the pressure on the abdominal arterial circulation.

But, this element alone considered, one should expect any resultant hemorrhage to occur very soon after the ligation of the cord; whereas, in fact, the bleeding nearly always appears several hours subsequently, in some cases after days. Thereby another causal factor is indicated. Where may it be found? I believe that the explanation of the accident under discussion is involved in the relation which the closure of the ductus arteriosus bears to the closure of the foramen ovale. Let the obliteration of these blood-channels proceed harmoniously, and the consequent forcing of an increased volume of blood through the lungs will compensate for the recoil upon the abdominal arterial system occasioned by the tying of the umbilical cord. Let the ductus arteriosus close more slowly proportionately than the foramen ovale, and the abdominal arteries, already subjected to heightened pressure, will be further distended at the expense of the pulmonary circulation. Should the obliteration of the lumen of the ductus arteriosus progress with disproportionate rapidity, the arterial vessels of the abdomen would be relieved of strain, and a corresponding active congestion of the lungs occur. Obviously such congestion of the pulmonary structures either does not happen as often as the analogous abdominal congestion, or, if it does supervene with comparative frequency, it does not imply the same risk. But that arterial congestion of the lungs may so occur and with disastrous results, is indicated by a case recently reported to the Lycoming County Medical Society by Dr. J. P. Connelly, a careful and trustworthy observer, in which death within two hours after birth took place with profuse hemoptysis presenting all the characteristics of such hemorrhage.

CLINICAL LECTURE.

THE TREATMENT OF NEPHRITIS.[1]

By J. M. DA COSTA, M.D., LL.D.,
of Philadelphia.

Gentlemen: I shall show you a series of cases of nephritis this morning. They are peculiar in some respects, as they display phenomena which are not always present in this affection. They are also of interest, as you will presently see, from a therapeutic point of view.

Recurrent Acute Parenchymatous Nephritis, with a Musical Heart-murmur.

Case I.—This patient, W. H. J., a colored fish-dealer, thirty-three years of age, came into the hospital on the 15th of January, a very ill man. He told us on admission that he is of temperate habits. He had an attack of gonorrhea twelve years ago, but denies other venereal disease. He has never had articular rheumatism. He had not been feeling well this winter, and, being exposed, caught cold repeatedly. He says that in October last, thirteen months after he first noticed symptoms of failing health, he quit work. Dropsy in the legs and ankles developed on several occasions after exposure to cold and wet. The man then had no appetite; had lost flesh and strength; had palpitation of the heart; and with this he noticed that his urine had gradually become less in quantity and smoky in color. Finally, the urine decreased to such an alarming degree that he decided to come into the hospital for treatment.

The last statement is confirmed by a study of the urine after admission, for during the first twenty-four hours he passed only five ounces of urine. The nature of this case is clear enough from the history. It is that of a man who, not being robust, has been much exposed to bad weather, and in whom unusual exposure was followed on several occasions by shortness of breath, palpitation, dropsy coming on gradually and slowly subsiding, to again return after exposure. But the point which does not show very clearly is rheumatism. Has there, or has there not, ever been in this case an attack of acute articular rheumatism? The man replies, "No."

[1] Remarks made in the course of a clinical lecture delivered January 27, 1894, at the Pennsylvania Hospital, Philadelphia.

You will see presently why I ask this question so pointedly.

On examining him we found this state of things: Upon admission he was very short of breath; there was dropsy of the legs, abdomen, and face—in fact, general dropsy, we might say; but his shortness of breath is what particularly attracted our attention. We found—and this is a point to which I shall return presently—a curious, musical murmur in his heart. His lungs were congested and full of fine râles. We also found albumin in the urine. In this scanty urine, of a specific gravity of only 1012, there was 8 per cent., by bulk, of albumin, and also hyaline and granular casts in abundance. In this connection it is important to note whether or not, at the time of his admission, he exhibited any cerebral symptoms. Did he have headache, or delirium, or any other symptom of nervous disorder? After coming into the ward he was subject to nervous spells at night, a curious delirium with confusion of ideas, during which he would sit up and scream violently, and sometimes fall backward in bed. In truth, he had attacks of temporary nocturnal delirium, although during the day his mind was clear. He had no delusion. This delirium occurred only immediately after admission, while the urine was extremely scanty; it was, in fact, a uremic delirium. There is no record of headache or convulsions. You have now heard the history of this case.

Now, gentlemen, the progress of this case well illustrates the effects of treatment, which I will briefly review, leaving some points for further discussion until I have given you the outlines of the case.

This man, with his nocturnal delirium, short breathing, rather irregular heart, feeble pulse, and annoying cough, was put upon tincture of digitalis, ten drops every three hours, and ten grains of ammonium carbonate every second hour. This was done on account of the very evident pulmonary congestion, indicated by râles in the chest and rapid breathing, and in order to stimulate expectoration. But while the action of the digitalis proved valuable to the general condition, the heart becoming steadier under its control, the total quantity of urine passed on the 16th was only five ounces. Realizing the necessity of stimulating the kidneys to action—for the digitalis while strengthening the heart had in this case very little action upon the kidneys—I gave what has become rather a favorite remedy of mine, the lactate of strontium, in thirty-grain doses in solution, four times a day, so that he received from a dram and a half to two drams daily. The result has been a striking one. From five ounces, noted on the 16th, we find the total urinary excretion rising in two days to thirty-five ounces. At the same time, the dropsical symptoms began to decrease, his breathing became less embarrassed, so that he could lie down, and, in truth, a general amelioration of the morbid phenomena took place, and particularly those connected with the dropsy. The man also slept better. He never complained of headache, and the nocturnal delirium did not recur during the course of this treatment. The lactate of strontium was continued in conjunction with digitalis until the 24th instant, when the latter was stopped, as the heart's action had become satisfactory.

Under this treatment the patient's uremic condition and his cough were much relieved, and he is now really in a much improved state. How much of this to attribute to the digitalis, and how much to the strontium, may come to us from the fact that for the first forty-eight hours, while under the digitalis treatment exclusively, he did not greatly improve, and also from the subsequent observation that after the digitalis was stopped the urine did not decidedly diminish in quantity again. We have now got it up to forty-eight ounces in twenty-four hours, and I attribute this mainly to the lactate of strontium, in connection with a restricted milk-diet and rest in bed.

Let us now proceed to examine the present condition of the patient, partly with reference to the heart and partly with reference to the kidneys. The pulse is jerky, slightly tense, and receding. The cardiac impulse is diffuse, rather lacking in force, certainly lacking in force if we take into account its diffuse, extended character. Percussion over the cardiac region shows that the heart is increased in size, and particularly in its transverse diameter. We have, therefore, a case in which there exists enlargement of the heart, not so much due to hypertrophy as to increase in size of the cavities; there is a moderate hypertrophy, but a considerable amount of dilatation. When you have a want of correspondence between the size of the heart and its impulse, and a weakness of the pulse in proportion to the area of cardiac percussion-dulness, you probably have to deal with a stretching of the cavities rather than with an hypertrophy from actual increase of the muscular elements in the walls of the heart.

Now, with regard to the valvular apparatus of the heart. I wish that you could all listen with me, for this is a very peculiar heart. When I apply the stethoscope over the cardiac region I hear a strange, half-musical, half-purring murmur, which has its site of maximum intensity at mid-sternum. It is aortic in situation. This murmur is associated with a purring tremor conveyed to the hand placed lightly on the chest. It is the kind of sensation which the French have described as *frémissement cataire*. It is a curious purring; you can feel it as well as hear it. This murmur I do not hear clearly at the apex of the heart, but it grows distinct toward the base, and particularly the right base; the purring sensation conveyed to the hand corresponds in locality with the intensity of the murmur. This murmur is systolic in time, at the aortic cartilage, and is followed by a second murmur which is not of a purring character.

This is a case of aortic regurgitation, the first sound having associated with it a peculiar, musical, purring murmur. Now, as I go down toward the mitral valve, I hear this purring murmur gradually becoming less distinct, although it is evidently transmitted; but I also hear another murmur, of a softer character, which I think denotes the independent existence, or rather coexistence, of mitral disease. However, the preponderance of the murmur here is evidently aortic, and especially the half-musical sounds. Therefore, while we recognize the mitral lesion, the fact of the double murmur, heard at the base and at mid-sternum, indicates aortic disease, and especially aortic regurgitation.

Now, what is the explanation of this peculiar murmur here, and of its musical character? Gentlemen, the cause of this musical sound is that there is a narrowing of the aortic orifice, a stenosis, which at the same time, as I have already said, permits of some regurgitation.

The orifice is not only narrow, but is especially narrow at one portion, where there is a free edge of membrane vibrating in the blood-current, or a fragment of a valve flapping to and fro. Simple obstruction would never give you a murmur like this. A pure aortic obstruction would give you a systolic murmur, as we have a distinct systolic murmur here, but the musical murmur is due to irregular narrowing, with projection of some tense band or fragment into the current. This musical murmur I can also hear along the course of the aorta at the back. I may say that, in the majority of instances, these musical murmurs of the heart have their origin at the aortic orifice.

With regard to the lungs, I now report that the congestion has disappeared. Yesterday the man was sitting up and was not dropsical. To-day there is slight edema of the dorsal aspect of the feet, but it is very slight indeed. The abdominal dropsy has disappeared. The tongue is slightly coated. The abdominal organs present nothing special; the liver, which was large and swollen, is now reduced to its normal size. As regards the condition of the kidneys, the urine is here and it will now be tested. It is neutral in reaction, with a specific gravity of 1018; amber in color, clear, and contains no albumin or casts. This is the same result as the examination of the 25th inst.—two days ago. The temperature has been normal since admission, and, indeed, part of the time has been subnormal.

Now, what is the condition of this man's kidneys? He came in with scanty urine, which was very distinctly albuminous, and which contained casts—some granular and some hyaline. It did not contain blood. That he had some form of nephritis is evident; but what form was it? Now, gentlemen, look back upon the history which is given us from the time of its beginning. The symptoms came on after cold and exposure; the dropsy afterward decreased; then it returned after another exposure; the man again recovered, and was well until the final exposure brought on his present attack. There can be only one explanation. He has had a series of attacks of acute nephritis, but there has been little if any persistent structural disease of the kidney. Of course the inflammation may have been added to by the disease of the heart, which I am satisfied has always existed, or at least for many years. How did the disease of the heart itself begin? I am not sure of this. The history would suggest that it started just as the disease of the kidneys did—as an acute affection following exposure, or it might have been a latent endocarditis. Which it was I cannot say, but we have no evidence of any previous attack of rheumatism. Considering his mode of life this in itself is rather remarkable.

Coming to the question of treatment, what agent has been most useful in promoting recovery? The strontium undoubtedly had the most effect upon the kidneys. The digitalis had a decided effect upon the heart, but the strontium had an excellent diuretic effect. This man's diet was one of milk for the first six days; he was then allowed to have bread, eggs, and vegetables in addition. He shall continue this diet, but may have besides oysters and broths. The strontium shall be kept up for a few days. For his slight bronchial catarrh he may take wine of ipecac 5 minims, solution of ammonium acetate 3 drams, and of syrup of tolu enough to make a tablespoonful, to be given every third hour. This is an expectorant which will promptly cause the catarrh to disappear. As regards his kidneys, they appear to have resumed their normal condition—at least there is at present no evidence of failure to perform their function properly.

ACUTE NEPHRITIS IN A CASE OF CIRRHOTIC KIDNEY.

Case II.—Here is another case from the men's medical ward. It is in a car-conductor, thirty-nine years of age, who came into the hospital on the same day as the preceding case—January 15th. His history is as follows: He had influenza in 1889, and this was followed by renal disease and dropsy, for which he was treated in a hospital for a period of four months. Last spring, or about a year ago, he had an attack which appears, from his account, to have been rheumatic in character. On the 5th of July last he had a third attack of illness, which was accompanied by dropsy, and he was taken to the Orthopedic Hospital, where he was treated for renal disease. He was discharged and returned to work, but has not felt well. In December he had loss of appetite, nausea, pain in the back, a slight hacking cough, and dimness of vision. When he was admitted to this hospital there was no marked swelling of any part of his body, but there was some slight edema of the feet and legs.

On admission his urine was found to be acid, with a specific gravity of 1008, cloudy, of amber color, and contained 8 per cent. of albumin, by bulk, and a few granular casts were found. He was then passing thirty ounces of urine daily. He has been under treatment for twelve days. He has been taking the lactate of strontium only since the 18th, in the same dose as the preceding case, two drams daily, in plain solution. He passed, on the 16th, twenty ounces; on the 18th, twenty-four; and on the 19th, fifty-seven. Note this increase after taking the strontium only one day; the quantity is almost doubled. The strontium, therefore, had a very happy result here as in the previous case. He is now passing forty-one ounces; somewhat subnormal, but still a larger quantity than it was before. There is now no albumin, and no casts have been detected after repeated examinations. The specific gravity has risen from 1008 to 1018, even with the greatly increased excretion of urine. In testing for albumin my favorite method is to acidulate the urine with acetic acid, and then to boil thoroughly; but I always confirm this by other tests, either by overlaying nitric acid with a layer of urine, or by the use of metaphosphoric or of picric acid.

You will see presently why I am so particular about this. If this report is borne out by subsequent examinations, the man is now free from renal affection. Furthermore, he has no disease of the heart. The first sound is somewhat dull and indistinct, but I cannot say that I find a murmur. The second sound is well marked, but it lacks accentuation; it is not what would be called an accentuated second sound.

Now, gentlemen, what has happened to this man? At first, it appears a case exactly like the other one, with attacks of acute nephritis recurring at intervals. But whether it is in reality so or not I would hesitate to-day to give an opinion. This will require at least another week of observation. I hesitate to say whether it is simply a case of acute nephritis, or a case of

acute nephritis superadded to a chronic contracted kidney. I cannot decide this until I have had further opportunity for observation. The low specific gravity (1008) suggests the latter view, and we know that in contracted kidney there is frequently a temporary disappearance of the tube-casts and albumin. In such a case it is only after long observation and repeated examinations have proved the permanent absence of albumin and casts that we can say that the patient has recovered from his renal disease.

There is another thing that suggests this view of the chronic character of the disease. It is the persistent edema. It is true, there is no accentuation of the second sound of the heart, which usually accompanies contracted kidney, nor is there any increase in the size of the heart, which we see in chronic forms of nephritis; the tension of the pulse is, however, somewhat increased.

What shall we do for him at present? The dropsy has nearly gone, the albumin and casts have disappeared. I will give him Basham's mixture (solution of iron and ammonium acetate), half an ounce three times a day. This will act as a tonic and keep up the urinary secretion.

CIRRHOTIC KIDNEY.

I will now show you another case of chronic nephritis:

CASE III.—This man, John D., a hostler, is fifty two years of age. He had typhoid fever in 1869. One year ago he had dropsy, with suppression of urine, with headache, and other uremic symptoms. He was under treatment in the German Hospital for five months last summer. He then returned to his work, and two months ago noticed that his legs were again swelling; his face also was swollen at times. He had indigestion, slight cough, was constipated, and had scanty urine, which was dark in color. It had a specific gravity of 1007 on admission; no tube-casts were found, but there was 46 per cent. of albumin by bulk. He had the characteristic pale, puffy face of a victim of nephritis. To be brief, I will say that he was put on the lactate of strontium, thirty grains four times a day. The amount of urine, which on admission was only forty ounces, was soon greatly increased; the albumin has decreased 40 per cent. He has been under treatment only for ten days.

There can be no doubt, from the history, the man's appearance, the low specific gravity of the urine, and the large amount of albumin, that he has a chronic form of renal disease, and not, as in the other cases, an acute attack. I also point out to you the fact that there is very little dropsy in this case, and what there has been has disappeared since he came under treatment. The man also had the strontium in the same dose as the other cases. He has cardiac palpitation, a certain amount of increased tension of the pulse, and a decided accentuation of the second sound of the heart, which, taken in conjunction with the other symptoms, leads me to conclude that we have here a case of contracted kidney. In this case there has been less improvement under the remedies employed than in the others.

I must confess, in the main, that what I have shown you to-day of the effects of the lactate of strontium in cases of nephritis only confirms my previous observations with this agent. The salts of strontium are valuable as diuretics in renal affections, and they are particularly valuable in the acute forms, but do less good in the chronic forms. They do not, according to my experience, act so much upon the structure or tissues of the kidneys as they do upon its secreting function. They are admirable diuretics. The claim that has been made by some French clinicians that strontium salts markedly reduce the amount of albumin in the urine has not been fully confirmed in my experience, except that the relative proportion of albumin is greatly reduced by the great increase in the quantity of the urine secreted. There is, however, some slight diminution in the amount of albumin, as well as increase in the quantity of the urine, especially in the acute forms. Whether in the parenchymatous and interstitial renal diseases these salts act beneficially upon the diseased or degenerated structures, or simply act as diuretics, has not been finally settled; but they certainly accomplish more good in the acute than in the chronic forms of nephritis.

To return to our patient, in treating this case we need pay less strict attention to restricting the diet than in the other cases. This man may have meat and vegetables, and a nourishing diet, avoiding indigestible and highly seasoned articles of food. For his treatment now he shall take bichlorid of mercury, grain $\frac{1}{30}$, in a wineglassful of water three times a day, as a tonic to improve his tissues. This will be the treatment in this case, except that we will see with the aid of the lactate of strontium that the urinary secretion is kept free.

I have shown you this morning, gentlemen, cases illustrating different stages and forms of nephritis, which also show the effects of a valuable remedy in the treatment, especially of the acute forms of the malady.

CLINICAL MEMORANDA.

A CASE OF HERPES ZOSTER SHOWING ERYTHEMATOUS, PAPULAR, AND VESICULAR STAGES.[1]

BY J. ABBOTT CANTRELL, M.D.,
OF PHILADELPHIA;
PROFESSOR OF DISEASES OF THE SKIN IN THE PHILADELPHIA POLYCLINIC; DERMATOLOGIST TO THE PHILADELPHIA AND ST AGNES' HOSPITALS.

IT is in rare instances only that the physician has the opportunity of witnessing herpes zoster other than in the vesicular stage, and in still more rare instances that he has the opportunity of following the eruption through the stages seen in the report of the following case, which appeared at my clinic, and which showed an erythematous, a papular, and a vesicular stage.

On March 22, 1894, W. M., a female, sixty-six years of age, an Italian by birth, had been in this country for the past two years. She is a small, aged-looking person, and apparently not in the best of health. She received a fall about ten years ago, hurting the right knee, since which time she has been unable to flex the joint. She had six children, the youngest of whom is thirty-three years of age and the eldest in his forty-eighth year. She

[1] Read before the J. M. Da Costa Medical Society, April 6, 1894.

states that they are all in good health. The disease for which she applied for relief began one week before. The lesions were confined to the right arm and forearm and over the scapular region. About one week before her visit she had complained of shooting pains in the arm, which were followed by an erythematous eruption which occupied the same points as were then attacked. Upon examination I found that slightly above the right thenar eminence, at the bend of the elbow, and on the antero-external face of the upper third of the arm, the lesions seemed to be distinctly vesicular, with a decided inflammatory border far beyond the vesicular lesions. Slightly below the elbow-bend—for instance, two inches—and the same distance above this point, directly in the median line, there were patches decidedly erythematous, with one vesicle in the center of each. On the antero-external face of the upper third of the arm there was a patch, two inches in diameter, which was erythematous, pinkish-red in color, in which the lesions had not as yet shown any vesiculation, although on passing the finger across them there seemed to be elevations and depressions as though the lesions were still *sub cutis*. On the external surface of the scapular region just below the spine there was another patch about 1.5 inches in diameter, which was erythematous, although not as red as the foregoing lesions; there were no lesions apparent in this patch, although when passing the finger across it there seemed to be three or four points that resembled papular formations, which also appeared to be as yet beneath the cutis. On the inner face of the upper third of the arm, just below the axilla, and not affecting the axilla proper, there was a patch three inches in diameter, of a yellowish-pink color, the feeling being about the same as that upon the general surface of the unaffected skin. This patch was not raised above the surrounding skin, and was somewhat irregular in outline.

The patient complained of great pain over the affected region, and especially if she happened to lie upon the arm of that side. An interesting point is that while the eruption had lasted one week the severe pains had not been present until three days before, although she had had slight stinging sensations prior to the appearance of the eruption. All the lesions followed the outer branch of the brachial plexus from the shoulder to the wrist.

On March 23d the patch over the thenar eminence remained about the same, those near the bend of the elbow and those above and below this region also remaining the same. The patch on the upper inner third of the arm just below the axilla seemed to be approaching the color of the normal skin. The patch on the upper antero-external third of the arm was covered with decided vesicular lesions, apparently as yet raised but slightly above the surface of the skin. The patch near the shoulder and just below the spine of the scapula did not appear to have the peculiar halo of inflammation witnessed the day before, the lesions of this patch remaining papular. The inflammatory condition of all the lesions did not appear so distinct as then. The pain seemed to have more of an itching character than of a neuralgic nature.

On March 24th the patch below the axilla, and which was at the last note approaching the normal color of the skin, had now entirely disappeared. Those immediately above and below the bend of the elbow were very much better. The lesions which were in the center of each of these had dried and become flattened, apparently without contents. The patch over the scapula had lost all of its heightened color, but the papules could still be felt on passing the finger over the region. The patch on the antero-external aspect of the upper third of the arm was covered with characteristic vesicles. The lesions in the other patches were more dry and seemed to be very much better. The pain was not present, and the patient slept during night, which she had not done for about one week.

On March 25th the pain was more severe than on the previous day. The lesions on the patch on the anterior lateral face of the upper third of the arm appeared to be fading; those at the bend of the elbow were still more dry; those on the scapular region were papules as yet, though tipped with vesicle-like formations. The patch on the upper outside of the arm was crusted. The lesions on the patch directly in front of the humerus were umbilicated and resembled very much the wheals of urticaria, although possibly not so reddish in color. The lesions elsewhere were also umbilicated and some were covered with a blood-crust at the summit.

The lesions near the thenar eminence contained a sero-purulent fluid, instead of serum, as usually found in lesions of this character. The halo of redness approached the normal color of the skin—that is, more of a yellowish-white. The pain followed the course of the ulnar nerve. The lesions were as yet distinct in places, and in others appeared to have coalesced, looking as if they had run together.

On March 28th the pain had entirely stopped and the patient was perfectly comfortable, and could sleep at night without danger of rolling on the affected parts. The lesions have almost dried up in their entire extent; those at the bend of the elbow were the only prominent ones; those on the anterior outer lateral face of the upper third of the arm looking more like enlarged papillæ (the so-called lichen pilaris) than anything else. The lesions of the thumb have entirely disappeared and the other lesions have likewise become indistinct. On March 31st the patient appeared at my office, at my request, and it was found that the lesions had entirely disappeared.

We thus have a condition of the skin prior to the formation of either papules or vesicles. This condition, properly an erythematous or macular stage, was shown in all the conditions prior to the visit of the patient, and, at her visit, in that portion of the arm on the inner surface just immediately below the axilla. Upon examination, this patch was found to about three inches in diameter and not raised above the surrounding healthy skin; the edges, while showing a distinct line of demarcation, were irregular in outline. To the touch, the parts felt exactly like that of the normal and unaffected skin; the color was not of that pinkish-red observed in the other lesions, but was more of a yellowish-pink.

Following the writers of to-day, I am unable to find but one reference to a condition of this kind as having existed with or being noticed prior to the formation of papules or vesicles; this is by Dr. James Nevins Hyde, quoting Fabre (*Text-book*, 3d ed., 1893, p. 246) in the following words: "The essential lesion, always present even when the vesicles are not seen, is the first macular

efflorescence of the disease. This appears in the form of vivid and brilliant-red erythematous macules, groups of which, from six to ten in number, appear in the tract supplied by the affected nerve. The vesicles (which are generally regarded as more characteristic of the disease) appear afterward in from a few hours to a day or more, spring from the macules, and are accompanied with a sensation of heat."

Previous to the foregoing, I find that the works of Anthony Todd Thomson (*Text-book on Diseases of the Skin*, 1850, p. 250) contain the following, which I here quote in the author's own words: "Heat, tingling, or acute pain, which continues for hours, days, and occasionally weeks, when it suddenly vanishes with the appearance of several red, irregular-shaped patches, at a small distance from one another, scarcely elevated above the skin, and upon which are rapidly developed numerous minute transparent vesicles, the greater number clustered together, but a few distinct."

Taking the words of these two writers, therefore, we do not find that the conditions present in the case I report are thoroughly brought out by them, and that the following description of the disease would perhaps come nearer stating the appearance of the disease throughout its entire course:

Herpes zoster appears at first as an erythematous redness, scattered in macules of irregular size over the course of the affected nerve; this remains for an indefinite time, when it is followed by the formation of papules upon these erythematous bases, which in turn, quickly or slowly, completely change into vesicles; the condition may or may not be preceded by any sensation of pain.

In further search through the literature of the subject I find that in my case there is a difference from the statements of Hebra (*Text-book: New Sydenham Society*, vol. i, p. 374, div. 1), who says: "I may also remark in this place that the first-formed clusters of vesicles are always nearest the nerve-centers, and that those which subsequently develop lie more toward the remote peripheral distribution of the corresponding nerves." The same writer also, in speaking of herpes zoster brachialis, states that the vesicles first appear opposite the fifth, sixth, or seventh cervical vertebra, and then so on down the arm. In my case the first-formed vesicles were remote from the center of the affected nerves—that is, the vesicles first formed were at or near the elbow, and the later lesions were in or about the locality mentioned by the preceding writer, namely, the fifth, sixth, or seventh vertebræ.

One other question arises in the study of this case, put by Thomson (*Text-book on Diseases of the Skin*, 1850, p. 251) in the following words: "Is it inflammatory or nervous?" In answer to this, he states that Rayer (*Text-book*, 1845), from having observed that it follows the direction of the intercostal nerves, regards it as nervous, and that he accords in the same opinion. Of late years it has been customary with writers to give this credit to Bärensprung, but it appears that this writer, while he did more to connect this disease with the nervous system, did not complete his observations until 1861, sixteen years after the time of Rayer.

Another interesting point in the case here reported is that the disease did not at every point go on to the formation of vesicles, but that at some places it seemed to abort at the erythematous stage and others in the papular stage, while still others went on to the vesicular stage. Of the many writers on the subject of herpes zoster, only two, namely, McCall Anderson and Allen Jameison (*Text-book*, 1892, p. 146) speak of the condition aborting in the papular stage, and not any that I am able to find speak of the condition aborting in the erythematous stage.

SPONTANEOUS RECOVERY FROM CONGENITAL CLUB-FOOT.

BY JAMES K. YOUNG, M.D.,
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So rarely does spontaneous recovery occur from congenital talipes equino-varus that the history of the following case, related to me by Dr. J. Wellington Byers, of Charlotte, N. C., is worthy of recording.

The case was one of severe double talipes equino-varus. From an examination of the case, April, 1892, the following history was elicited:

"The patient is a male negro, thirty-six years old, with congenital double complete talipes equino-varus. At birth, the toes of both feet touched the heels. The child walked first at five years, and wore its first pair of shoes—heavy, thick ones—at thirteen years of age. He walked on the sides of his feet, the toes being still in the same position as at birth. Up to the age of twenty years he continued to stand and walk on the sides of his feet, lifting one foot over the opposite. At the age of twenty-six years spontaneous improvement was noticed in the right foot, which has gradually progressed until now, when the entire foot and leg are normal in size, shape, position, and function. The left foot is still slightly turned in—pigeon-toed—though the man stands flat on the foot, the only abnormal features being a small leg and slight contracture of the extensor tendons on the dorsum. Improvement is yet constantly going on, and a complete cure appears to be only a question of time."

After a careful and painstaking research, extending over a period of two years, but one similar case of spontaneous recovery has been discovered, and that is the unilateral case referred to by Baron Dupuytren, in his "Lectures upon Clinical Surgery." [1]

"This deformity," he says, "is sometimes cured without the assistance of art. A case is related by Dr. Holtz, of a boy, born of indigent parents, with a very well-marked inversion of the foot. Without any attempt at treatment he was perfectly free from the deformity at twelve years of age. He endeavored himself to turn his foot outward, and as he was obliged to work hard and carry heavy burdens, he was forced to lean heavily on the ground. Exercise restored the equilibrium of muscular action, and now, at the age of twenty years, he would not be supposed to have ever suffered from club-foot."

It is the rule, almost without exception, for cases of congenital club-foot (talipes equino-varus) to grow progressively worse without treatment, and every surgeon knows how prone cases of club-foot are to relapse unless

[1] "Lectures upon Clinical Surgery," Register and Library of Med. and Chir. Sci., p. 201. Washington, 1835.

carefully treated subsequently to operation. So well recognized is this fact that the rule is now established to always slightly over-correct the deformity in manual, mechanical, or operative methods, so as to allow for this tendency to return to the deformed position after the curative means have been removed. The most important factor in preventing relapse is walking with the sole of the foot firmly planted upon the ground, and it is interesting to observe that in both of these instances recovery did not commence until the patients walked.

In the first case the occupation and efforts of the patient were favorable toward recovery, but in the second case the recovery appears to have occurred spontaneously. Moreover, the former case was unilateral, so that the patient was at a great advantage in setting the foot flatly and applying his body-weight and the weight of heavy burdens upon it. With this advantage it will be observed that the first case "was perfectly free from the deformity at twelve years of age," whereas, at twenty years the second case walked with one foot over the other, and recovery did not begin until twenty-six years of age. It is possible that in this case there was an inherited (racial) tendency to relaxation of the plantar fascias, plantar muscles, and the peroneal muscles; and what, had his feet been normal at birth, would have resulted in a condition of acquired valgus, in the event of the occurrence of double congenital equino-varus, resulted in restoring the feet to their normal relations.

Both cases illustrate forcibly how slow to overcome deformity Nature is, in that as many years were required to accomplish what the surgeon could have accomplished in so many minutes by operative means, or in as many months by mechanical means.

It also illustrates that treatment should begin very early, as Dupuytren pointed out before, referring to this case. It is my belief that treatment should commence at birth, and be continued until a perfect cure has been accomplished.

A CASE OF CHOREA DURING PREGNANCY.

By THEO. G. DAVIS, M.D.,
of Bridgeton, N. J.

As so few cases of chorea are met during pregnancy, especially of the grave character called by Osler *chorea insaniens*, I am led to report the case of C. B., twenty years and ten months of age, physically healthy, mentally deficient, but not an imbecile or idiot.

There is an uncertain history of slight chorea during infancy, but none since. The woman has menstruated regularly since fourteen; she was married four months ago, and menstruated once since.

I was consulted at about the third month because of constipation, nausea, vomiting, sleeplessness, and nervousness. I found the patient irritable and surly in disposition, with choreic movements of the body, arms, and head; the urine scanty, very albuminous, and containing phosphates and urates in great excess. There was a slight rise in temperature, and slight edema of the feet and eyelids.

Proper diet, purgatives, and rest in bed were prescribed, but the chorea became rapidly worse. She could not stand or sit, nor could she feed herself or drink; when drink was offered the cup was seized by the teeth and the contents swallowed with difficulty. The head, face, eyes, lips, arms, hands, body, and legs were constantly in motion. She beat and pounded her body and abdomen, thrashed about on the bed, and excoriated and bruised her extremities. The urine was passed in bed from inability to sit on the vessel or commode, even with help, so violent were the movements.

Gelsemium in large doses did some good. Arsenic was not given on account of the renal complication. Cimicifuga, bromids and chloral were used without effect, and hyoscin proved useless. Morphin in quarter-grain doses hypodermatically would cause sleep for a time, with cessation of the movements, but they were renewed on awakening. The woman would try to answer questions, but was unable to control the vocal apparatus except to blurt out monosyllables. The heart was regular during sleep, but rapid and choreic during waking, and the pulse rose to 120, the temperature to 102°.

Medication being without effect and the patient growing rapidly worse, seeming like an insane person at times, abortion was advised, and after consultation, and with the assistance of Dr. Mailly, chloroform was administered, the os forcibly dilated, and the uterus emptied, proper asepsis being observed.

Ergot and morphin were given hypodermatically. The flow from the vagina was normal and without odor. The patient now rested more quietly, took nourishment, and seemed better; the choreic movements were much less, but during an attack of chorea the woman expired by syncope, twenty hours after the abortion. No post-mortem was allowed.

MEDICAL PROGRESS.

Rupture of the Uterus, with Recovery.—Dohrn (*Centralbl. f. Gynäkologie*, 1894, No. 11, p. 250) has reported the case of a multiparous woman, forty-one years old, in which in labor at term, the child occupying a transverse position, rupture of the uterus occurred in the course of attempts to bring about version, external pressure being conjoined with the internal manipulation. A dead child was finally extracted, and the woman, with the placenta unexpelled, sent quite a long distance in wintry weather to a hospital. Here the external genitalia were thoroughly disinfected with a 5 per cent. solution of carbolic acid, the vagina swabbed with mercuric chlorid, and finally well irrigated with a 4 per cent. solution of boric acid. Examination now disclosed the existence of a large tear involving the left side of the cervix and the vaginal vault, and in which lay loops of intestine and the placenta. The latter was removed without inducing noteworthy hemorrhage. The vagina was then packed with iodoform-gauze and an abdominal bandage firmly applied. The hemorrhage now ceased entirely and the patient revived under the use of stimulants. There was no evidence of internal hemorrhage and further interference was deemed uncalled for. Six days later the iodoform-gauze was cautiously removed; though saturated with lochial discharge it was free from odor. The anemic condition improved from day to day, and after temporary and moderate elevation of temperature and an attack of pneumonia, the woman was dismissed in good condition thirty-eight days after the un-

fortunate occurrence. A large cicatrix remained on the left side of the cervix and the vaginal vault, in consequence of the traction exerted by which the uterus was fixed and deviated to the right.

The Relation of Phlegmasia Alba Dolens in Typhoid Fever to Typhoid-bacilli.—HAUSHALTER (*Rev. Méd. de l'Est*, Sept. 1, 1893; *Rev. Int. de Bibliographie*, 1894, No. 2, p. 17) notes that the point of departure of venous thrombosis is to be found in an alteration of the lining membrane of the vessel, and that in some diseases this alteration may be due to microörganisms constituting a secondary infection. A case is reported that goes to show that phlegmasia may be due directly to the action of typhoid-bacilli. A girl, twenty-one years old, died in the sixth week of an attack of typhoid fever, and upon post-mortem examination a fibrinous clot was found in the left crural vein, extending from the apex of Scarpa's triangle to the iliac vein. Bacteriologic study of the walls of the vein and of the clot, as well as of the liver and spleen (which contained two small abscesses), disclosed the presence exclusively of typhoid-bacilli. The phlegmasia was thus the seat of an unusual localization of the bacilli, either from the formation of a bacillary embolus at the time of resolution of rose-spots or from infection of the walls of the vein by direct contact with an adjacent lymphatic gland, itself contaminated by the backward stream from the lymphatic glands of the abdomen.

Menstruation and Ovulation.—From a rather extended histologic study, LEOPOLD and MIRONOFF (*Archiv für Gynäkologie*, B. xlv, H. 3, p. 506) conclude that menstruation, *i. e.*, the periodic discharge of blood from the uterine mucous membrane, is usually accompanied by ovulation, although the former not rarely occurs without the latter. The hemorrhage depends upon the presence of the ovaries and an adequate degree of development of the uterine mucosa, and not upon the maturation and rupture of ovisacs. Ovulation occurs as a rule at the same time as menstruation; the process requires an increased afflux of blood to the generative organs for several days, and results in the formation of a typical corpus luteum. Ovulation may also occur independently of menstruation, though under physiologic conditions but rarely. At times ovulation, with the formation of a typical corpus luteum, is replaced by an afflux of blood to an ovisac that has not matured and does not undergo rupture, resulting in the formation of an atypical corpus luteum. Normal ovisacs may be present at a time when the ovaries are undergoing senile contraction, and they may undergo physiologic rupture and form typical corpora lutea.

Phenol-elimination in Disease.—As a result of a clinical and analytic investigation into the elimination of phenol in disease conducted at the clinic of v. Jaksch, at Prague, STRASSER (*Zeitschrift f. klin. Medicin*, Band xxiv, Hefte 5, 6, p. 543) has reached conclusions that agree essentially with those arrived at by previous investigators, the amounts found, however, being greater. Thus, an increase was found in the course of acute infectious disease (*e. g.*, in the first and second weeks of typhoid fever, pleuro-pneumonia, pneumonia in the stage of resolution); also in all cases of local suppuration or gangrene (*e. g.*, pyo-pneumothorax, putrid bronchitis, gangrene, peritonitis); finally in diabetes mellitus. Normal amounts were found in cases of cystitis, leukemia, and typhoid fever eight days after defervescence; diminished amounts in cases of chronic anemia, of typhoid fever during the period of defervescence, of intestinal obstruction attended with persistent vomiting, of acute phosphorus-poisoning, and of hypertrophic cirrhosis of the liver. The elimination of indican, as well as the variations in the relation between the ether sulphuric acids and the preformed acids, showed no correspondence with the variation in the amounts of phenol.

Relapses in Typhoid Fever.—From a careful study of fifty consecutive cases of typhoid fever with relapse, obtained from the records of Guy's Hospital and from other data, STEWART (*Practitioner*, No. 309, p. 184) arrives at the conclusion that so-called relapses are genuine second attacks, presenting all the phenomena of the first attack and due to reinfection of the large intestine from the small. This reinfection is believed to generally take place at a definite period in the original attack and is probably effected by the passage of sloughs over healthy lymphoid follicles. Constipation was found to be an important predisposing cause of relapses. The opinion is expressed that the prognosis of relapses is good because a certain degree of immunity has been acquired by reason of the first primary attack, and fatal complications are less common.

THERAPEUTIC NOTES.

The Treatment of Carcinoma with Thallin Periodid.—MORTIMER GRANVILLE (*Lancet*, No. 3680, p. 639) maintains the utility of periodotetrahydroparamethyloxychinolin (thallin periodid) in the treatment of carcinoma. He has given the drug in doses of four grains, in pill-form, with a grain of musk, or one-twentieth of a grain of pilocarpin hydrochlorate, if the skin was dry and inactive, every second or third hour, and nothing else. One of the earlier signs of improvement noted has been a better color of the skin. In some instances there was darkening of the urine, but in none disturbance of the stomach or debility. It is theorized that the effect produced is a destruction of the locally proliferating and the wandering leukocytes.

For Pulmonary Tuberculosis.—

R.—Creosoti }
a-Naphthol } . . . . . ää ʒij.
Acidi arseniosi . . . . . gr. ij.
Strychninæ nitrat. . . . . gr. j.
Atropinæ sulphat. . . . . gr. ¼.
Extracti gentianæ }
Gummi arabic. } ää q. s. ut ft. pil. no. cxx.—M.

S.—One from four to six times daily. MAXIMOWICZ.

For Acute Bronchitis in Children, DE HOLSTEN (*Sem. Med.*, No. 2; *Wiener medizin. Presse*, No. 9) recommends calomel rubbed up with sugar of milk, and given in doses of one-sixth grain every two or three hours for four or eight doses. As the bowels are evacuated the temperature declines and the other symptoms subside.

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SATURDAY, APRIL 21, 1894.

HYPNOTISM AND SUGGESTION IN PRACTICE.

Whether hynotism be itself a hysteric manifestation and adapted only to a restricted class of cases, as taught by Charcot and his followers, or a pyschic condition physiologic in character, and therefore capable of therapeutic application in many diverse conditions, as believed by Bernheim and the Nancy school, it remains a fact that the instances of its successful clinical use are rapidly increasing in current medical literature. Nearly a generation ago, Esdaile in India employed hypnotism as an anesthetic agent, and reported some twelve hundred surgical operations performed with its aid. It is probable that the introduction of ether and chloroform diverted attention from this valuable resource by rendering it unnecessary under ordinary circumstances; but from time to time cases are reported which show that under unusual conditions or in exceptional cases it still remains a resource which is not to be despised.

It is probable that the method of producing temporary anesthesia by rapid respiration, as introduced by Dr. Bonwill, may be explained, in great measure at least, by hypnotic suggestion. Even in the administration of ordinary anesthetics, operators occasionally see instances of rapid anesthesia which are clearly hypnotic in character. Some years ago, a physician of Philadelphia, Dr. Barr, described a method of administering ether in obstetric cases in which he succeeded in inducing a state of partial unconsciousness, during which he would describe an imaginary excursion or a drive in the Park, which the patient would afterward refer to with expressions of pleasure, and also with astonishment that she had felt none of the pangs of labor. This was undoubtedly a mixed anesthesia of ether and hypnotism, and is analogous to other instances reported from Europe, in which hypnotism alone was used in parturition with the same happy effects.

To the instances of use in surgery and obstetrics must be added numerous medical cases in which equally good results have been obtained.

A case in point is furnished by an article in the *Australasian Medical Gazette*,[1] furnished by Dr. Creed, in which the symptoms of asthma were entirely relieved by hypnotic suggestion. The patient, proving rebellious to ordinary treatment, all the ordinary remedies being tried without relief, was hypnotized daily for ten days and appropriate suggestions made. On the third day he was much relieved, and after the tenth, became entirely free from dyspnea, and he could then walk with considerable speed, without respiratory distress. It was found that he still had occasional modified attacks of asthma, and he was accordingly provided with a written order to sleep when he read it, and to wake up after five minutes, breathing freely. The report states that this was entirely successful; that the patient always carries his prescription with him, and that it never fails him. What makes the case of still greater interest is the supplementary statement that there are numerous polypi in both nostrils, which have not been removed for fear of making the cure by hypnotism questionable. Such an instance of therapeutic devotion and self-denial on the part of the attending physician is remarkable, and would hardly be matched in this country, where the polypi would undoubtedly have been removed early in the history of the case, and certainly before concluding that "all" the ordinary methods of treatment had been employed without affording relief.

Therapeutic suggestion has also been used in overcoming bad habits and vices, and some valuable results have been recorded. The noteworthy report of Dr. Bushnell (The Medical News, March 31,

[1] Abstracted in Boston Medical and Surgical Journal, April 5, 1894.

1894) is a valuable contribution to this aspect of the question. It is possible in the cases in which genuine and lasting reformation of inebriates has been obtained through the so-called "gold-cures," that suggestion has been called into play with good effect. It is indeed very probable that, among those persons who are addicted to alcohol, many of whom are degenerates and of highly neurotic character, hypnotic suggestion may have a very fruitful field to work in, especially as results have been reported of its successful application in such cases, in which a distaste for liquor has been produced by this means, in subjects who had previously been confirmed drunkards. Sexual abnormalities, such as onanism, spermatorrhea, and impotence, have been successfully treated in this way, and erotic dreams have been banished. BRAMWELL has reported a case of anemic amenorrhea in a young woman, in which the menstrual function was restored upon the day appointed during a hypnotic séance. A very excellent review of the subject was made by DR. FREDERICK H. GERRISH, in an address read before the Maine Medical Association last year, in which his experience in nearly fifteen hundred instances of the remedial applications of hypnotic suggestion is detailed with much discretion and judgment.

Finally, the minor applications of suggestion are of daily utility in practice. DR. RUSH said that he had always stopped to explain to his patients the results which he expected to obtain from the medicines that he prescribed, and that he had found great benefit from this course. We know, at the present day, that expectant attention exerts powerful physiologic effects, and by adapting this in his therapeutics the careful physician is frequently able to score a decided advantage over the mere routine prescriber.

EDITORIAL COMMENTS.

To "Elevate to a Pure and Ethical Plane," etc.—We have before us a remarkable circular which well deserves the notice of the American medical profession. It is called a *Prospectus of the American Physicians' Sanitarium Association*, and sets forth a scheme that it says is *under the charge and indorsement of the regular profession, and on purely ethical lines*. It would, perhaps, more properly be termed "Keeleyism within the Profession," or, "The Commission-business in Medicine."

The circular is signed by nobody, and the composition of the company or association is in no way indicated. But the anonymous company assures us that it has acquired "by purchase of hitherto secret" (the *hitherto* italicized—the synchronous "wink" not shown!) "but thoroughly tested and proven remedies, etc." But this is not enough! Each physician "in good standing" (why the restriction?) who shall send a patient is to receive a ($100.00) share of the capital stock, etc. The object, to be sure, is "to reap the rich harvest of profit now almost wholly diverted to quackery," "to rescue from disrepute and consequent 'unfaith,' and to *elevate to a pure and ethical plane* the virtuous principles underlying the successful treatment of narcotic and alcoholic inebriety, etc." "Science," "scientific principles," "afflicted humanity," and the customary glittering generalities are, of course, liberally used.

We advise our readers to secure a copy of this delightful and richly humorous contribution to medical ethics, and to put it under their pillows to dream over. Perhaps the spirit of the Boss Tweeds of medicine may appear to them in their nightmare, asking, with characteristic leer, Well! what are you going to do about it?"

Catalogue of a Good Library.—Physicians are interested in popular libraries, not only as good citizens, but as special conservators of the mental and moral health of the community. A well-chosen collection of books, arranged in a well-ventilated and well-lighted room, and with proper facilities for general use, in and out of the library-hall, is a hygienic establishment of the first importance. We therefore commend to the earnest attention of our readers Document No. 200 of the U. S. Bureau of Education, issued from the Government Printing Office at Washington, 1893, copies of which may be obtained upon request, addressed to the HON. W. T. HARRIS, U. S. Commissioner of Education. This is a catalogue, or, as the learned Commissioner humanely spells it, this *catalog*, of 5000 volumes for a popular library, selected by a committee of the American Library Association, MARY A. CUTLER, chairman. The collection was shown as part of the U. S. Government Exhibit at the World's Columbian Exposition.

The catalogue is of great value, not only for the titles, but also as a model of clear arrangement; and the directions given for choosing, purchasing, arranging, and indexing books will be useful in private collections as well as in public ones. Naturally we should have desired a larger representation of good, popular health-books, such, for example, as B. W. RICHARDSON'S "Field of Disease," "Preventive Medicine," or "The Common Health," and the admirable series of "Health Primers," edited by W. W. KEEN. However, the few books chosen in this department are good, and the work as a whole, in idea and in execution, confers the greatest credit upon all concerned.

The Home Missionary Society.—Among the most worthy institutions of our city is the Home Missionary Society, the demands upon whose resources have been particularly heavy during the past winter and so continue with little-abated urgency. The society endeavors to afford relief to the unemployed, the poor, the sick, and special cases, and makes visits to children placed under its care. The society has under its guardianship 373 boys and girls, whose natural guardians either could not or would not provide for them. These children are placed with well-recommended families in country homes where they are educated and trained for lives of usefulness. The work of the society is strictly non-sectarian and is

sustained by voluntary contributions. Mr. William H. Lucas, 322 Race Street, is the treasurer, and will be more than glad to receive money, securities, or real estate.

Dr. N. S. Davis on the Code-Revision.—We commend to the thoughtful study of every member of the American Medical Association the letter of Dr. N. S. Davis in the *Journal of the American Medical Association* for April 14th. The veteran leader, with his accustomed clearness, cogency, and consistent logic, reviews the report of the majority of the Committee on Revision of the Code of Ethics, and fully exposes its retrogressive tendencies. We are glad to be in line with Dr. Davis on this question. Let the watchword of scientific and honorable physicians henceforth be: "*Vote Down Revision!*"

SOCIETY PROCEEDINGS.

THE ELEVENTH INTERNATIONAL MEDICAL CONGRESS.[1]

Held at Rome, from March 29 to April 5, 1894.

The Congress was opened in the presence of the King and Queen of Italy, the principal Ministers of State, the Ambassadors to Italy of the courts of Germany, France, Turkey, Holland, Sweden, and Greece; and of an immense number of members of the Congress, and of ladies and other guests. The ceremony took place in the Costanzi Theater, which was filled an hour before the time fixed for the commencement of the ceremony.

Signor Crispi saluted the members of the Congress in the name of Italy, and expressed the pleasure with which Italians saw such an assembly in their capital. "You labor," he said, "in two different directions for the benefit of humanity; in the one you teach us how to prevent evil, in the other how to remove it. Through hygiene, by purging the air and the earth of poisonous miasma, you preserve the health of mankind; through the use of remedies which cure and give hope, you remove diseases. Thanks to you, cities once unhealthy have become flourishing, and districts once deserted and insalubrious have been transformed into gardens. Rome, the mother of all, gave to the ancient world civilization and law. To-day, thanks in no small part to you, there will go forth from Rome a fertile promise of peace—peace which is the necessity and hope of the modern world, peace which will be made the more sure by this International Congress, which is a sign of the brotherhood and of the oneness of nations."

Prof. Baccelli, President of the Congress and Minister of Public Instruction, then spoke in Latin. Among other things he said:

The great difficulties which necessarily attend the civil and political new-birth of a nation render the dearer to Italy the pledges of good-will and of honor which she has received since she has attained her unity and reconquered her rights. Last year to the festival at Genoa the peoples of nearly all the world sent their navies to render a well-merited honor to Christopher Columbus, an Italian citizen. To-day they have sent to Rome men learned in the biologic sciences in order that the bonds which unite us may be drawn the more tightly in the interest of the public good. The learned who have come to Rome will remember that in ancient times the most distinguished public men cultivated *medicina politica* (hygiene), which the ancients esteemed highly, to which Cicero and Cato bear abundant witness. I greet you, then! You are welcomed with joy by this classic land, where the breath of liberty has survived the memory of the ancient greatness of its people. Here no one is a stranger; here, where every country finds some remembrances of its past, where all the human race forms one great family, may each one of you in thought and act seek the preservation of nations and the health of mankind. Then will the maxim of our ancestors shine through you with a new brilliancy: "*Salus populi suprema lex esto*," et "*nulla re magis homines ad Deos accedere quam salutem hominibus dando.*" . . . I am proud to be able, in the name and by the wish of the King, to declare the Eleventh International Medical Congress open in Rome—*Undecimum omnium gentium de medicina conventum, hodie, Roma auspicatur.*

Prince Ruspoli, syndic of Rome, then welcomed the Congress in the name of the city of Rome. In all ages, he said, physicians had been treated in Italy with universal respect. Augustus decreed that they should be Roman citizens, and at court, in the army, and in the communes a distinguished place was reserved for them. The earliest scientific congress met in Rome, and it was then that the conflict between science and prejudice began. In the time of Cæsar a great scientific congress met in Rome to discuss a proposal for altering the course of the Tiber. The governing class then rejected all proposals with the famous epigram of Pisonius: "*Nil mutandum.*" Since that epoch circumstances and habits of thought had changed, and Rome welcomed this Congress of scientific men with heartfelt gratitude.

Prof. Virchow, speaking in Italian, referred first to the history of the struggles by which Italy had attained to unity. The last Congress, in choosing Rome as the place of meeting of the Eleventh, had desired to pay homage to the ancient traditions and the new glories of Rome. The members had come to Rome as friends and brothers; accustomed as they were always to subordinate their own personal convenience to the wants of others, physicians were the true messengers of peace and humanity.

Prof. Maraglino, the Secretary-General, then made a report on the organization of the Congress, and announced that the total number of papers announced was 2700, and that the number of foreign members was as follows: Germany, 900; England and British Colonies, 700; Austria-Hungary, 700; France nearly as many; 200 from Spain, Russia, Switzerland, and the United States of America, and some 500 others from Portugal, Sweden, and Norway, Holland, Belgium, Turkey, Roumania, Servia, Greece, Mexico, South America, Japan, and Borneo. Thirty-two governments and 425 scientific bodies were represented. There were also a large number of guests, including many ladies. He then called upon the representatives of the various countries, who each spoke a few words: For Austria, Professor Nothnagel; for Belgium, Professor Crocq:

[1] Prepared from advance sheets kindly furnished by the British Medical Journal.

for Egypt, Hassan Mahmoud Pasha; for Denmark, Dr. Salomonsen; for France, Professor Bouchard; for Germany, Dr. von Köhler, of the Army Medical Department; for England, Sir William MacCormac; for Norway, Professor Laache; for Holland, Professor Stokvis; for Ireland, Sir William Stokes; for Portugal, Professor Roche; for Roumania, Professor Severeano; for Russia, Dr. Sklifossovsky; for Spain, Dr. F. Caro; for Sweden, Professor Holmgren.

On the proposition of Prof. Virchow, the President and members of the Provisional Committee were formally elected as president and officers of the Congress. The ceremony, which had lasted an hour and a half, then came to an end.

In the afternoon the Sections assembled in the rooms assigned to them at the Policlinic, and elected their officers.

On the second day, Prof. Rudolph Virchow, of Berlin, delivered an address on "Morgagni and Anatomic Thought." Prof. v. Babes, of Bucharest, delivered an address on "The Position of the State in Respect to Modern Bacteriologic Research."

On the third day Prof. Michael Foster, of Cambridge, Eng., delivered an address on "The Organization of Science." Prof. H. Nothnagel, of Vienna, delivered an address on "The Adaptation of the Organism to Pathologic Changes." Dr. S. Laache, of Christiania, Norway, delivered an address on "Idiopathic Hypertrophy of the Heart, and on Degeneration of the Heart-muscle."

On the sixth day Prof. Giulio Bizzozero, of Turin, delivered an address on "The Growth and Regeneration of the Organism."

On the seventh day Prof. A. Jacobi, of New York, delivered an address entitled "Non Nocere."

Section of Internal Medicine.

Prof. Baccelli was unanimously elected acting President, and Prof. Gerhardt, Prof. Bouchard, Prof. Ziemssen, Dr. Grainger Stewart, and Dr. Dreschfeld were amongst those appointed Honorary Presidents.

Warfringe read a paper upon "The Arsenical Treatment of Pernicious Anemia, Leukemia, and Pseudo-leukemia." In all of these diseases he had obtained excellent results.

A. Murri read a paper upon "Cold as a Cause of Chlorosis," which he considered to be due to some disturbance of the vasomotor centers in the medulla and cord.

Dr. Baccelli announced the death of Prof. Brugrioli, of Bologna.

Prof. v. Ziemssen read a paper upon "The Intravenous Transfusion of Undefibrinated Blood." He stated that the operation was not an easy one, although in experienced hands there were no serious difficulties to be overcome, and the results obtained were excellent. In cases of chronic anemia he considered the repeated injection of small quantities of blood a most valuable mode of treatment.

G. De Luca read a paper, in which he stated that he had produced jaundice by the injection of toluol-diamin.

P. Castellino advocated the treatment of anemia with corrosive sublimate.

L. Carrieri described the supervention of purpura hæmorrhagica in the course of a case of chronic articular rheumatism.

L. Cantu discussed gastric disturbances as a cause of chlorosis.

Section of Pathology.

Prof. Virchow presided.

Prof. Bonomo read a paper on "Glanders," in which he dealt with investigations on the biologic action of the products of the bacillus of glanders. These products varied in their action according to the animals used and the mode of cultivating the bacillus. Rabbits infected with the bacillus of glanders, even when the latter was attenuated, were extremely sensitive to mallein, even when the animals were to all appearances in good health. These poisons gave rise to nodules scattered throughout the organs, and the same results might be obtained in guinea-pigs. Twenty-four horses out of 32 suspected of infection with glanders reacted to mallein, and 17 were found to be infected whilst 6 were not, so that the reaction was not an absolute proof of the presence of glanders. Very small doses of mallein injected in a man suffering from glanders produced typical symptoms of reaction lasting from six to thirty hours, as well as great amelioration of the symptoms and even cicatrization of the nodules. In horses good results were obtained with a mallein prepared from the blood and organs of cats. A cure was effected in one horse which was suffering from typical glanders. The same result was obtained in dogs, whilst the control-animals not inoculated with mallein all died from glanders.

Prof. Virchow spoke of the excellent results obtained in Germany by using a dried preparation of mallein for the diagnosis of glanders.

Dr. Julius Donatti and Dr. Gezza Gara read a paper on "Fever-producing Substances." The fever depends on the kind of microbes which are used, whilst some do not produce any fever at all. With anthrax-products the fever appeared in rabbits on the second day, and lasted four to five days. The same result was produced on sheep, whilst similar results were obtained in horses with the products secreted by the streptococcus. The fever-producing action of the chemic products of the bacillus pyocyaneus discovered by Charrin and Ruffer was confirmed. Extracts of the spleen of animals which had died from infectious disease—for example, swine-fever—proved extremely toxic, and their injection was followed by fever.

Dr. Salomonsen (on behalf of Mr. Frissen) read a paper on "The Treatment of Smallpox in a Red Room." The author stated that suppuration was prevented by this treatment, and no scars were produced. He based his treatment on the fact that in 1830 Picton showed that darkness had a favorable effect on the course of smallpox, and also on the experiments of Charcot and Hamer, Unna, Malakoff, and others. Four physicians tried the treatment, and only one (Juhel Rénoy, of Paris) was dissatisfied. Four non-vaccinated children, at Bergen, by this method showed no fever and no suppuration. At Copenhagen, eleven patients were so treated, with similar results. Another physician obtained the same effects, whilst the vesicles which had not yet dried at once began to suppurate when exposed to normal light. The paper was illustrated by several extremely interesting photographs. Great care must be taken that

the treatment should be complete and continued right through the course of the disease.

Babes referred to certain diseases prevalent in Roumania, especially a disease which he calls entero-hepatitis suppurativa, which is not dysenteric in character. It begins by the appearance in the lower part of the ascending colon of small pustules which rupture. There was well-marked edema of surrounding parts which might go on to the formation of retroperitoneal abscesses perforating the intestines, or gangrene of the bowel might follow. This enteritis was always accompanied by an abscess of the liver or necrosis of certain parts of this organ. Amebæ were found in the intestines, but had also been found in ordinary diarrhea, but he did not meet with them after death or in the abscesses of the liver during life or after death. As a rule, the abscesses were sterile, but in some cases various ill-defined microorganisms were present.

Prof. Cornil called attention to Zancarol's work in Egypt, who did not find amebæ in all cases of abscesses of the liver. He considers that no organism has been proved to be the cause of dysentery.

Dr. Kauffmann found amebæ in dysenteric diarrhea in a large number of cases of dysentery, especially when the stools contained blood. He considered that amebæ were the cause of dysenteric diarrhea, and he had also seen them in one case of abscess of the liver. He had noticed that abscesses of the liver might appear one year or more after the dysentery is cured, and an epidemic of dysentery was always followed by an epidemic of abscesses of the liver.

Prof. Virchow said that he had himself showed amebæ in cases of dysentery, but that their etiologic action was uncertain.

A discussion on Carcinoma took place.

Prof. Pio Foa stated that the idea that carcinoma was an infectious disease was as old as medicine itself, but lately facts had been accumulating which placed this idea on a more secure basis. He referred to the observation that in many places carcinoma occurs with startling frequency, and that the mortality in such places sometimes amounted to 15 per cent. of that of the whole population, whilst in other places it fell as low as 7 per cent. Although the cases of actual contagion were few and far between, yet such cases undoubtedly existed. Carcinoma-grafting had also been successful, for, although it was impossible to graft the carcinoma of man on animals, yet the experiments of Hanau and others proved that carcinoma of animals could be successfully inoculated in another animal of the same species. He would now limit himself to the question of the existence of protozoa in carcinoma. This was, in his opinion, an extremely complicated question, as different observers had described as parasites things which had nothing in common with each other. He was of opinion that the parasites described by Darier, Wickham, Podwyssozki and Sawtchenko, Korotneff, and others were simply invaginated cells or products of degeneration. On the other hand, he was of opinion that the structures described by himself, Ruffer, Plimmer, Soudakewitsch, and others had the characteristics of parasites. These parasites all gave the same reactions, and consisted of a central corpuscle or nucleus which did not stain with basic anilin dyes, surrounded by a variable amount of clear protoplasm, the whole being enclosed in a distinct capsule. He confirmed the observations of Ruffer and Plimmer as to the distribution of these parasites in carcinomatous tumors, and called attention to the fact already detailed by the same observers, namely, that the larger and more cystic forms occurred in the center of the carcinomatous tumor, and the smaller ones at the periphery. He had seen several such large parasites form together, and he thought that the multiplication of parasites might occur by the breaking up of the nucleus into small round bodies, though he did not consider this interpretation to be absolutely certain. He had seen the figures of division as described by Ruffer and Plimmer, but was not satisfied that their interpretation was the correct one. He concluded by saying that there undoubtedly existed in carcinoma certain well-defined bodies which were easily recognizable, which had characteristic staining reactions, and which could be easily distinguished from cellular invaginations and degenerations. The lecture was illustrated by some beautiful specimens stained with saffranin, hematoxylin, and orange.

Prof. Trasbot spoke from the veterinary point of view. Carcinoma was fairly common in dogs and horses, but less frequent in cattle; the tumors previously described as carcinoma and sarcoma of cattle having lately been proved to be actinomycotic processes. In dogs carcinoma was common enough, but in a great many cases tubercle of dogs had been mistaken for carcinoma, and hence the so-called successful inoculations of carcinoma in dogs must be regarded with the greatest skepticism, unless controlled by accurate histologic examinations. Personally he had made numerous inoculations of canine carcinoma into other dogs, and had only once obtained a positive result. But in that case even the tumor grew for a few months only, and was then reabsorbed without any metastases forming in internal organs. He was of the opinion, therefore, that carcinoma could not be inoculated from one animal to the other.

Prof. V. Cornil said that he had been working at this subject for some considerable time, but that he was unable to agree with the conclusions contained in Prof. Foà's and Dr. Ruffer's published papers. According to his observations, the nucleus of the carcinoma-cells consisted of two substances which had different chemic affinities: (1) The nuclein, which stained intensely with the ordinary nuclear dyes; and (2) the paranuclein, which stained with protoplasmic dyes. He described how in certain nuclei the hypertrophy of the nucleus was accompanied or preceded by a multiplication of the paranuclein bodies normally present in the nucleus. Parts of the nucleus were then cut off, and formed bodies which, in Dr. Cornil's opinion, were identical with the parasites described by Foà and Ruffer. Dr. Cornil showed a few sections to illustrate his opinion and a large number of beautifully-executed drawings. He did not deny that in all probability parasites were present in carcinoma, but thought that at present they had not been satisfactorily demonstrated. He pointed out that, clinically, there were a great many facts showing that carcinoma could be propagated from point to point by auto-inoculation, as, for instance, from one side of the labia majora to the other or from the lower lip to the upper. He also referred to cases in which, after an exploratory

puncture, carcinoma developed along the track of the needle. He thought there was evidence showing that in certain cases carcinoma could be communicated from one person to the other. He concluded by saying that at the present moment the discussion ought to be narrowed down to the explanation of certain well-defined structures found in carcinoma cells.

Dr. Cazin spoke of the inoculation-experiments which he had performed on dogs suffering from carcinoma. Inoculations into animals of the same species had hitherto proved unsuccessful, except in three cases of non-malignant tumors of the penis. In these three cases he had been able to reproduce the same tumor by grafting it into other animals; but all cases in which he had grafted epithelial tumors had uniformly proved unsuccessful. Graftings from the tumor of a dog to another part of the same animal's body had always been attended with success. He had also performed experiments on rats, which were not yet ready for publication.

Prof. Schrön said that he could confirm the opinions expressed by Prof. Foà, Dr. Ruffer, and others as to the parasitic character of the bodies described in carcinoma, but he was of the opinion that besides these one could trace the evolution of these undoubted coccidia into an adult gregarine. He also thought that in some cases he had seen falciform bodies, and insisted on the necessity of examining fresh specimens.

Morpurgo and Galliotti made references to the minute structure of the carcinomatous body.

Dr. M. Armand Ruffer said that he regretted being opposed to MM. Cornil and Fraenkel, and many other eminent observers, but his researches in collaboration with Drs. Walker and Plimmer had led him to precisely the same conclusion as his friend M. Foà. In all the cases of carcinoma that he had examined he found the bodies which gave distinct staining reactions differing entirely from those of the nuclei of carcinomatous cells. He, with his collaborators, had frequently observed the appearances described by MM. Cornil and Fraenkel, and had even illustrated some of them in his published papers, but he maintained that these appearances differed essentially from the parasites described by Prof. Foà and himself. The reactions of the paranuclein of M. Cornil much resembled those of the nucleus of the carcinoma-parasite; but this parasite, like many protozoa studied by Dr. Ruffer, never contains real chromatin, and he believed that in the pathologic human cell there was no nucleus which did not contain chromatin. Some of the figures of MM. Cornil and Fraenkel resembled very closely those described by Martin Heidenhain in the epithelial cells of the triton helveticus. Dr. Ruffer had also studied phagocytosis in carcinoma, and it was indubitable that the leukocytes penetrated into the epithelial cells, and carried off the parasites which they found there. He had observed this occurrence a number of times in young metastases of the liver and of internal glandular organs. He had not studied the inoculation of carcinoma into animals, but believed that, in order to obtain positive results, it would be necessary to inoculate the metastases, and not the primary tumor; for the grafting of sarcoma only succeeded when one inoculated metastatic tumors. He quite agreed with MM. Duplay and Cazin that the coccidia of Wickham, Korotneff, Podwyssozki, and Sawtchenko, and other observers, were only invaginated and degenerated pathologic cells; he believed that to be admitted now by most observers. With regard to the multiplication of the parasites, Dr. Ruffer had nothing to add to the notes published a year ago by Dr. Plimmer and himself. He believed that little result would be obtained by the usual methods of fixing and coloring, and that recourse must now be had to a new method. He and Dr. Plimmer had for some months past studied fresh preparations mounted in carcinoma-juice; on taking care to lower the condenser and to use an oblique light the parasites could most clearly be seen in the cells, and even the nuclei were distinct. He had even observed movements, which he hoped to be able to photograph later on. If such a preparation be stained with Loeffler's blue, with the addition of a few drops of methylene-green, a very characteristic reaction was obtained; the carcinomatous cell took a dark-blue color, the nucleus of the parasite a pale-pink, with a clear part in the middle, and its protoplasm a light-blue. If one daily examined a carcinoma after removal one could follow all the stages of the degeneration of these parasites, and also certain phases of the life-history of these protozoa, on which Dr. Ruffer hoped to speak on a future occasion. Loeffler's blue was not the only reagent which gave differential staining, for very beautiful preparations had also been obtained with anilin stains, such as eosin, for example.

Dr. Hanau said that with reference to the frequency of carcinoma in dogs and horses, as described by M. Trasbot, the reason for this was probably that horses and dogs were allowed to live to an advanced age, and only killed when age or infirmities rendered them useless; whereas cattle, sheep, and other animals were destroyed for food at an early age, and hence it was not likely that one could have many opportunities of seeing carcinoma in them. He would not give an opinion on the histologic appearances of carcinoma-parasites. He was of opinion, however, that his own successful experiments on rats had shown that it was possible to inoculate carcinoma from one animal to another of the same species; though he did not consider this as a proof of the infectiousness of carcinoma, but rather in the light of a successful transplantation of tissue. He thought there were a great many difficulties in the explaining of carcinoma by the assumption that it was an infectious disease, chiefly owing to the peculiar localization in certain parts of the body, and to the fact that the metastatic growths of carcinoma presented exactly the same structure as those of the parent tumors. He agreed with Dr. Ruffer in thinking that histology had done all it could be expected to do in this question, and that for future work we must trust rather to experimentation and to the observation of fresh specimens.

Dr. Cornil, in summing up, congratulated the Section on the interesting discussion to which the members had listened. He thought it was valuable not only for the facts which had been adduced for and against the parasitic origin of carcinoma, but also because this discussion would serve for future workers as a guide to the points which still remain to be investigated.

Section of Diseases of Children.

The President of the Section, Dr. Blasi, opened the proceedings by giving an address in which, after indicat-

ing the scope of the Section, he sketched the history of pediatrics in Italy. After mentioning some of the earliest observations on embryology, which dated back to the sixteenth century, he referred to the observations of B. da Carpi, who in the early part of the sixteenth century recognized the existence of hereditary syphilis, and of di Aquila of de Vizo, of Genoa, who had discovered the specific treatment; of Curzio, who had studied the phenomena of malaria in children; of Montany, of Venice, who in 1560 had described tetanus neonatorum; of Cortesi, of Bologna, who had first described hydrocephalus; of Carnevale di Rapoli (1620), who had written one of the earliest known descriptions of diphtheria; of Martino Chigi, of Bologna, who had written a stupendous monograph on croup. The list of Italian physicians who from early times had given attention to diseases of children, would, he said, occupy too much time, but he mentioned the names of Bagellardo, of Venice, who in 1481 published a work, *De Ægritudinibus Infantum*, now very rare; and of Mercuréale, who in somewhat more recent times had printed a work entitled *De Morbis Infantum*. Altogether Italy might well be proud of the contributions made to the study of disease in children, and to their relief through the establishment of hospitals, which had been established in most of the principal cities by public or private charity.

A discussion was held on "Diphtheria and Croup."

Prof. T. Escherich observed that there were two factors to be considered in the pathogeny of diphtheria: the resistance of the tissues and the virulence of the bacillus; but that secondary infections by pyogenic organisms frequently determined the clinical character of any particular case. The successful treatment of diphtheria might be grounded on the destruction of the bacilli, on the reduction of their virulence, or on some method of rendering the individual immune.

Prof. Baginsky related the results of a systematic examination of the kidneys in cases of diphtheria complicated by albuminuria and nephritis. This research had shown that the morbid process in the kidneys was a glomerular nephritis attended with considerable desquamation of the epithelium and the appearance of cylindric, epithelial, and hyaline casts in the urine.

Prof. Heubner gave some statistics of diphtheria during three periods, first without the use of anti-diphtherial serum, second with it, and a third period again without it. His general conclusion was that the serum had no influence on the course of the disease.

Prof. Mya read a paper on "The Occurrence of Mixed Infection in Diphtheria," which he had found to be an extremely frequent occurrence. His researches showed that the presence of streptococci did not exercise any apparent influence on the course of the general toxic symptoms, but they had an effect in increasing the rapidity of the process, and in determining the production of albuminuria. The diphtheric infection predisposed the tissues to become the seat of septic pneumonia.

Dr. Luigi Consetti said that for the production of true diphtheria the presence of the bacillus of Loeffler was necessary, though membranous affections due to streptococci might give rise to croup and general symptoms of a severe type. As to the relative frequency of diphtherial laryngitis and non-specific croup, he stated that in 22 children affected with primary croup he had isolated the bacillus of Loeffler in 19. Antiseptic medication was most to be relied upon, especially a spray of corrosive sublimate, which might be used in solutions as weak as 1 in 10,000. Boric acid spray, 2 in 100, was also valuable; also nitrate of silver, 1 or 2 in 30, thymol 5 per cent., and many other antiseptics. A thorough douching of the mouth and fauces with an antiseptic solution was to be recommended when the case was first seen. Mercurial preparations were also of use for internal administration.

Prof. Ranke said that Behring's serum had been tested by himself and Prof. Oërtel in the Children's Clinic at Munich in cases of diphtheria of the pharynx with laryngeal complications necessitating intubation. During recent years the average mortality of such cases had been 37 per cent. The strongest serum was used. The first case recovered, but in the six following cases pneumonia supervened, apparently of a special type and led to a fatal termination.

Prof. Soltmann considered it important to recognize that though under the local treatment recommended by Escherich, the membrane might diminish in quantity, the temperature must be taken as the safest guide, and that the patient must not be considered to be convalescent until the temperature had become normal. He referred to the necessity for disinfection of the mouth, which should be continued after convalescence for at least a week before the patient was allowed to associate with others.

Prof. Malinowski said that he had employed intratonsillar injections with excellent results. Recently he had used aqua chlori, and all the cases so treated had recovered; but when symptoms of croup were present injections did not give good results. Intercurrent pneumonia he looked upon as due to an infection taking place perhaps contemporaneously with the diphtherial infection.

Prof. Heubner had not observed pneumonia after injections with Behring's serum. He referred to the importance of mixed infection in determining the clinical character of an attack of diphtheria, and expressed the opinion that personal predisposition was an important factor.

Prof. Escherich expressed the hope that the treatment by serum might yet be proved to give good results.

Profs. Mya, Baginsky, Rehn, Fede, and Consetti also made some brief remarks.

Dr. Raffaelle Sarra read a paper on "The Local Treatment of Diphtheria by Methyl-violet," which in his hands had not yielded satisfactory results, the rate of mortality being 66 per cent.

A paper on "Intubation and Tracheotomy" was read by Dr. Francesco Egidi, who recommended intubation on the ground that it might be performed at an early date, and that it did not at all prevent, but rather facilitated, the subsequent performance of tracheotomy, should that become necessary.

Prof. Pietro Masucci read a paper on "The Spread of Diphtheria through Schools, Day and Boarding." He thought that every boarding-school should be provided with an observation-ward as well as isolation-wards, and dwelt on the importance of isolating also the attendants on suspicious cases. He spoke in favor of compulsory notification.

Short papers on "The Treatment of Diphtheria" were read also by DR. SZILLAI and DR. GUELPA, and PROFS. COMBY and MASUCCI made some remarks upon them.

A discussion was held on "Rickets and its Relation to Spasmodic Affections."

DR. J. COMBY discussed the relation of rickets to convulsive attacks in children. He found that in every 100 rickety children about 10 had suffered or were still suffering from convulsions more or less serious, and either general or involving only the glottis. The occurrence of general convulsions or glottic spasm did not stand in any special relation to cranio-tabes or rickets. The digestive troubles which preceded and accompanied rickets were responsible for the convulsions which were due to the absorption of toxins from the alimentary canal.

PROF. A. GAMBA, in discussing the "Etiology and Pathology of Rickets," expressed the opinion that the disorder was a constitutional malady dependent on a vice of nutrition, associated especially with an imperfect assimilation of calcium phosphate. Treatment should be mainly hygienic.

DR. CHAUMIER made an elaborate communication founded upon a special mission which he had undertaken at the direction of the Minister of Public Instruction of France for the purpose of studying rickets in Italy. He had arrived at the opinion that rickets was a specific disease produced by a microbe as yet undiscovered. It was contagious, endemic in towns, and sometimes epidemic. It was met with as a spontaneous and epidemic disease among young swine, the osseous lesions being identical with those observed in children. The germs of the disease seemed to be able to exist in houses for a long time, and it was probable that cases of apparent heredity might thus be explained.

DR. NICOLO FEDE had been led to the conclusion that rickets was to be attributed to a disturbance of assimilation, traceable to the absorption of toxins produced by putrefactive changes in the intestinal canal.

PROF. ADOLPHE D'ESPINE considered that the remarkable researches of Escherich on tetany in infants had proved the frequent existence of nervous hyperexcitability, in spasm of the glottis, and in many other conditions produced by digestive disorders in infants under one year. He, however, objected to the employment of the word "tetanie" as synonymous with reflex hyperexcitability.

PROF. FEDE was led by his experience to accept the views advanced by Prof. Comby.

DR. MENSI, from a study of the gastric contents in rickets, had found that the total acidity was excessive, that hydrochloric acid was deficient, and that abnormal acids, the product of fermentative processes, were present.

PROF. BORELLI considered that the conditions of intra-uterine life had an important share in the production of rickets, in predisposing the infant to develop the disorder after birth.

DR. G. B. VIALI, from observations made in Constantinople, had come to the conclusion that rickets was a predisposing, but not a determining cause of laryngismus stridulus.

DR. PAVONE thought that it was easy to exaggerate the importance of gastro-intestinal disturbances as causes of rickets. Common as rickets was, such digestive disturbances were far more common.

Profs. Escherich, Baginsky, Rehn, Soltmann, and Ranke also took part in the discussion.

Subsequently papers were read by Prof. Rehn on "Congenital Myxedema;" and by Prof. Soltmann on "Cyclic Hemoglobinuria." Dr. Sophie Bakunin read an elaborate paper on the "Comparative Embryonic Anatomy of the Genito-urinary System in Man and other Animals;" and Dr. F. Cerna made a communication on the "Diagnostic Value of Indicanuria in Children."

DR. A. MOUSSOUS read a paper on the "Infantile Form of General Paralysis." The lesions, both naked-eye and microscopic, in a case recorded by him in 1891, were in every respect similar to those observed in the adult. Since that date he had observed a second case. The cases, taken together with observations made at Bicêtre, had convinced him that general paralysis would come on in childhood. Development went on normally until the age of two, three, four, five, or six years, but convulsions were often observed indicating an undue excitability of the nervous system. The onset of the disease was marked by symptoms of meningitis, of apoplectic symptoms, or severe convulsions. The manner of the patient was subsequently changed, and characteristic symptoms developed with greater or less rapidity —vertigo, tinnitus, epileptic fits, partial or complete, with or without paralysis. Next ensues, slowly or rapidly, the stage of dementia, which becomes absolute. Death ensued in from one to four years, determined sometimes by an attack of meningitis, sometimes by an epileptic attack, with hyperpyrexia, sometimes by marasmus.

SECTION OF DERMATOLOGY AND SYPHILOGRAPHY.

PROF. KAPOSI, of Vienna, presided.

DR. TOUTON made a communication on the gonococcus of the blennorrhagic process. He insisted that the gonococcus was the cause of blennorrhagia, and that the diagnosis of the disease can only be made sure by the microscope. The gonococci are usually most abundant at first, but if at later periods the microscopic examinations are negative, the microörganisms can be made evident by a provocative irritation. Sometimes cultures by Wertheim's method may be necessary for diagnosis. He maintained that the tissues beneath the epithelium are invaded, as well as the softer epithelial cells, but not the horny cells. The infection extends by the lymph-channels.

Other papers on genito-urinary subjects were read by the following members: DR. PADULA, on the "Infective Fever of the Blennorrhagic Virus"; DR. GRÖNFIELD, on the "Present Position of Urethroscopy"; Dr. ROCA, on "Lemon-juice in the Treatment of Blennorrhagia"; DR. BARRUCCO, on the "Local Treatment of Urethritis with a New Form of Syringe."

Messrs. Barduzzi, Mibelli, Bröse, Neisser, Jullien, Wahrschewski, v. Petersen, Mange, and Casper took part in the discussion.

DR. NEISSER doubted the invasion of connective tissue by the gonococci, except rarely. He considered that frequent examinations for the microörganisms were necessary, and if, after repeated trials, none was found, the case might be regarded as non-infective, and the

individual allowed to marry, even though abundant secretion be present. He did not think that the clinical conditions alone, the presence of flocci, etc., were of so much importance.

Dr. Savill communicated his researches on a new form of "Epidemic Skin-disease," occurring in London, and exhibited a large series of photographs and drawings.

An important discussion on the present state of the lichen question was then opened by Dr. Neisser, who maintained that the term "lichen" should be confined alone to the disease known as "lichen ruber," which presents two principal forms: "lichen (ruber) planus" of Wilson, and "L. ruber acuminatus" (Hebra, Kaposi).

Mr. Malcolm Morris read a paper in which, after reviewing the literature that had appeared on the subject of lichen since the Dermatological Congress in Paris in 1889, he said lichen had no more right to be created into a group than pityriasis or purpura. After sorting out of the lichen group those elements that belonged to definite diseases, such as eczema, syphilis, etc., the only affection left was the lichen planus described by Erasmus Wilson. He summed up his conclusions as follows: 1. Lichen is not a disease, but a type of lesion. 2. The term should be reserved for the clinical entity described by Erasmus Wilson under the name of lichen planus, which is the same as Hebra's lichen ruber. 3. The affection described by Kaposi under the name of lichen ruber acuminatus is identical with that described by Devergie and Besnier as pityriasis rubra pilaris. 4. Other forms of lichen—obtusus, hypertrophicus, verrucosus, etc., are variants of the typical form, the Hebra-Wilson lichen ruber planus. 5. The group of symptoms to which the name of lichen planus is applied is probably caused by a variety of factors, but at present we are almost entirely in the dark as to its pathogeneis.

Drs. Majocchi, Ehrmann, Oro, Schwimmer, Schiff, Hallopeau, and Tomassoli joined in the discussion, Dr. Schiff maintaining that "L. ruber acuminatus" is identical with Devergie's "pityriasis rubra pilaris," and that the affection is quite distinct from L. ruber planus. The present confusion is caused by employing the term "lichen" for all these conditions.

Among the papers read was one by Dr. Alfred Eddowes, on the "Treatment of Ringworm," giving statistics of a large number of cases treated by Una's method, and detailing the modifications he now employs. He strongly disapproved of epilation, and thought that, with proper care, children might be allowed to attend school while under treatment.

Dr. Abraham communicated a "New Method of Treating Obstinate Parasitic Diseases of the Scalp by the Application of Parasiticides under Pressure," and exhibited an apparatus which he had constructed for the purpose. During the past few months he had successfully employed the method in several cases which had long resisted other treatment.

Section of Laryngology.

The following were the officers elected: *President*—Prof. Massei. *Honorary Presidents*—Drs. Fraenkel, Schmidt, Chiari, Semon, Gougenheim, Moure, Ruault, Schmiegelow, Botey, Sajous, Lowman, Heryng, Sokolowsky, and Onodi. *Secretaries*—Drs. Nuvoli (responsible secretary), Egidi, Trifiletti, Karis, Flatau, Bronner, St. Clair Thompson, Rougé, and Roquer y Casadesus.

The President delivered a stirring inaugural address, in which he made a sympathetic reference to the late Sir Morell Mackenzie.

Papers were read by Prof. Chiari on "Pachydermia of the Larynx and on the Nature of Fibroma of the Vocal Bands." In regard to pachydermia he excluded Virchow's verrucose form, which he considered to be only the clinical papilloma. Pachydermia diffusa was, in his opinion, a phase of some other diseased condition of the larynx, and not a particular disease *sui generis*. He distinguished the primary or idiopathic form, the result of simple chronic catarrh, and the secondary or accessory form, which was part of some other disease such as perichondritis, tubercle, or syphilis. Potassium iodid was occasionally beneficial, but in some cases was injurious to the general health, and was often powerless, even in cases of undoubtedly syphilitic origin. The treatment he recommended most strongly, when called for, was electrolysis, which he believed to be the most efficacious in preventing the recurrences which were too apt to take place.

Vibratory massage of the mucous membrane of the upper air-passages was recommended very highly by Drs. Braun, Dionisio, and Garnault, but decried by Dr. Chiari. Good effects were claimed for it in the treatment of ozena.

A paper on "Intubation of the Larynx in the Adult" was read by Dr. Schmiegelow, and a good discussion took place, especially with reference to its use in cicatricial contractions in the larynx and upper part of the trachea. Several speakers referred to the excellent results obtained from thyrotomy and excision of the cicatricial tissue, and also from dilatation from below upward through the tracheotomy wound.

Section of Otology.

The following officers were elected: *President*—Dr. Emilio Rossi. *Honorary Presidents*—Drs. Calladon, Gellé, Moos, and Politzer. *Secretaries*—Drs. Ferreri, Dundas Grant, Ludewig, Garnault, and Sartori.

The President's Address was followed by the description of a case of otitic thrombosis of the lateral sinus, by Prof. Moos. The mastoid process was trephined, and after death from pyosepticemia, lateral sinus disease was found, in spite of the absence of the characteristic temperature and rigors. Prof. Moos advises bacteriologic examination of the blood as an aid to diagnosis in such obscure cases.

Dr. Moure described a case of latent cerebral abscess due to ear-disease in which sudden death took place. No necropsy was obtained. Several similar cases were related by others.

Dr. Rheinhardt read a paper on "The Treatment of Cholesteatoma by Operation." He recommended in the operation the transplantation of flaps from the back of the ear, and the leaving of an opening in the mastoid region, especially in women, where it could be hidden by the hair. There was freedom from recurrence in those cases in which the opening was left.

Prof. Gradenigo dealt with the subject of auricular affections in hereditary syphilis, which might be either

suppurative or non-suppurative, and might occur even in advanced life.

DR. GELLÉ reported cases in which anti-syphilitic treatment produced rapid benefit after other means had quite failed.

DR. CALLADON read a paper on "Fixation-abscesses in Otology," meaning thereby the derivative action of an abscess in the external ear in effecting the cure of middle-ear inflammation. He employed applications of thymol as being an antiseptic irritant.

The pathogenesis of Ménière's disease was discussed by PROF. GRADENIGO, who considered most cases to be of the spurious or reflex type, and due to disease of the tympanum.

DR. AVALEDO described a case in which Ménière's symptoms were well marked, and in which recovery took place after the performance of Stacke's operation.

Papers were further read by DR. KIRCHNER on "The Value of Gymnastics of the Ossicles," and on "Necrosis of the Cochlea;" by DR. GELLÉ, on "The Osseous Casing of the Facial Nerve and its Lesions," directing attention to a case in which the extraction of an ordinary aural polypus was followed by facial paralysis. PROF. POLITZER described a new form of disease of the ear, with progressive deafness, in which a kind of inflammatory hyperostosis took place round and in the fenestra ovalis. It occurred chiefly in the later years of life, and sometimes was associated with the arthritic or syphilitic dyscrasiæ. PROF. MOOS showed and described some beautiful sections illustrating disease of the inner ear. PROF. GRAZZI read a paper on "The Injurious Effects of Railway Signals of a Noisy Nature on those Employed among Them," and insisted on the necessity for examining the ears as much as the eyes of railway servants. DR. CONRADI, in some studies on the influence of asymmetry of the cranium on Weber's tuning-fork experiment, arrived at the conclusion that the influence was *nil*.

(To be concluded.)

PHILADELPHIA ACADEMY OF SURGERY.

Meeting March 5, 1894.

THE PRESIDENT, DR. WILLIAM HUNT, IN THE CHAIR.

DR. JOHN H. PACKARD presented a verbal report of three cases of left inguinal colotomy:

By some surgical writers, notably the elder Gross, the opinion has been expressed that the making of an artificial anus by opening the colon placed the patient in a condition so distressing that death itself would be preferable. My own experience with these operations warrants me in upholding a very different view. My first case occurred in 1873, and I had the advantage of the presence and assistance of Prof. Gross and of Dr. Levis; the patient, whose rectum was occluded by a uterine carcinoma, lived in comfort for eight months, dying then from exhaustion due to the advance of the disease. In this instance, and in other cases for many years afterward, I made the opening in the left loin, thinking the access more ready, and preferring to avoid encroaching upon the peritoneum. There is, however, one great objection to the method, that the point of exit for the feces is so placed as to be only with difficulty reached by the patient, and to require the assistance of others in attending to it.

For the operation in the left groin, I think the best rule as to the incision is to make it, just as on the right side in appendicitis, an inch and a half from the left anterior superior iliac spine, and at right angles with a line between this process and the umbilicus. With scrupulous asepsis the opening of the peritoneum is made with safety; the operation is one of no more difficulty than that in the loin, and the artificial anus is entirely under the patient's control. The directions given in some of the books for the finding of the bowel seem to me to be needlessly complex; if the large intestine does not immediately present itself in the wound, a portion of the small intestine will, and must be pushed aside, when the sigmoid flexure, especially if distended, will be seen, and may be recognized by the longitudinal muscular bands.

My own opinion is that it is a matter of but little moment whether the bowel is opened at once or after the the lapse of several days.

I do think it important that the gut should be well drawn down into the wound until the portion above this point is slightly tense, so as to avoid subsequent prolapse through the artificial anus. Even with this precaution it sometimes happens that the inner wall will pouch out and be a cause of some annoyance.

For suturing the edges of the peritoneum to those of the skin it is well to use black silk, so that these stitches may be readily distinguished from those by which the bowel itself is fastened in the wound; these latter should be of white silk, and should penetrate beyond the muscular coat, but not through the mucous membrane.

It is not always easy to judge how large an opening should be made into the bowel. In a child, or when the wall of the gut is very thin, a small orifice will suffice; and I do not think more than three-quarters of an inch is ever necessary.

CASE I.—J. B., a mulatto, aged fifty-five years, but looking much older, was admitted into my ward at the Pennsylvania Hospital, November 26, 1892, on account of epithelial carcinoma of the rectum. His condition was most deplorable; there was a mass of disease stiffening the wall of the bowel and discharging from its ulcerated surface a very offensive pus, which, mixed with fecal matter, flowed away constantly through the wide-open anal orifice. Hence he not only suffered agonizing pain, but the intolerable fetor made him loathsome to himself as well as to all about him.

He had, moreover, a left inguinal hernia, which he ascribed to the kick of a horse in January, 1891. This did not in any way interfere with the operation, which was done four days after his admission. The opening into the bowel was not made until December 4th, or four days later.

Immediately after the operation his temperature fell to 97.6°, but he soon rallied and did well. The artificial anus gave no trouble, but was cleansed once daily. By means of washing out with a solution of potassium permanganate or other detergent, the rectum was rendered inoffensive. A portion of the diseased mass was curetted away about four weeks after the colotomy, but no more radical procedure seemed to be justified.

The patient lived in comfort until April 18th, nearly five months, and then died painlessly from exhaustion.

At the autopsy it was found that the morbid growth extended five inches above the anus, and had involved the posterior wall of the bladder; there were abundant deposits in the pelvic and mesenteric glands.

A somewhat noticeable fact was that the serous covering of the gut was adherent to the parietal peritoneum for a long distance above the point of operation.

Case II.—Ellen B., aged fifty-two years, was admitted under my care in the Pennsylvania Hospital, October 24, 1893, suffering from extensive carcinomatous disease of the uterus, involving the rectum; she had not had a natural stool for a year. Her general health was not greatly impaired, but she had great distress by reason of the rectal obstruction.

The next day I exposed and secured the sigmoid flexure, and twenty-four hours afterward opened the bowel. Just after the operation her temperature fell to 96.2°, but reaction took place quickly. Regular movements were soon had through the artificial anus, and on the seventeenth day she was discharged at her own request, to return to her home in Sullivan County, Pa.

Case III.—Mrs. M., aged about fifty, living in one of the cities in the interior of this State, was seen by me in April, 1893, on account of almost total obstruction of the rectum by the pressure of a tumor of the womb, which filled up the entire pelvic cavity. To attack this in its then condition seemed to me, as well as to her physicians, unwarrantable; and as her suffering arose mainly from the rectal obstruction, I proposed opening the bowel in the left groin. To this she agreed, and I performed the operation at her residence. Complete relief was afforded, and after some experiments in the devising of a suitable contrivance for keeping control of the contents of the bowel, this lady was enabled to resume her active life, going into society freely, and attending to all her affairs without hindrance.

Should this tumor, probably a fibroid, develop so as to rise out of the pelvis, the question of hysterectomy might be entertained; and if this were successfully accomplished the closure of the artificial anus might, perhaps be undertaken.

Dr. J. M. Barton: I can speak most favorably of inguinal colotomy. It gives us an opportunity of determining what portion of the bowel is involved and making our opening well above the disease. It also permits us to explore the glands in the interior if removal of the rectum is contemplated. In regard to opening the bowel I have preferred to permit it to remain at least four or five hours before opening; by that time the peritoneal surfaces are adherent. It has been recommended to leave the bowel twenty-four hours and then open with the Paquelin cautery. This seems unnecessary. I usually employ scissors and control any bleeding that may occur with hemostats. I have had no difficulty from prolapse.

Dr. John B. Deaver: It has fallen to my lot to have done several colotomies, but only one or two inguinal. My reason for preferring the lumbar method is chiefly that it is an extra-peritoneal operation. Another reason is that if the disease extends it will take longer to reach the opening in the loin than one in the abdominal wall in front. I am free to confess that I have been largely influenced by the views of Mr. Bryant. The lumbar operation is not by any means difficult. I think that it is quite as simple, and, when there is distention, simpler than the abdominal operation. In the anterior operation distention increases the difficulty.

The anterior wound can probably be looked after better than one in the loin, but it is more difficult to keep a pad in position in the former case.

Dr. T. S. K. Morton: Not many days ago I did an iliac or inguinal colotomy, and a most curious feature of the case was an apparent transposition of the colon to the right side. On making the incision in the left side the colon presented, but on making traction it was found that the entire transverse colon and omentum were speedily delivered, and I had considerable difficulty in locating the descending colon. I finally traced it to the right inguinal region. The lumbar operation, I think, would not have been feasible in this case.

There is one point which I think has not been sufficintly emphasized, and that is the importance of making a spur. This cannot be done by suturing the side of the bowel to the abdominal opening. If little pieces of feces pass the opening and reach the diseased surface they cause a great deal of pain. I have seen nothing equal to a bar of glass or other material passed through the meso-colon for securing an adequate spur. When the bowel is cut transversely upon this support you have two openings presenting, one above the other, and it is impossible for feces to pass across. As far as the control of the anterior opening is concerned, in the cases that I have seen it has been almost perfect.

With regard to prolapse, Mr. Allingham has proposed dragging into the wound as much colon as possible, and removing the redundant portion. He claims that this will prevent subsequent prolapse. This method has been condemned by others, and it has been found sufficient to make the upper part of the colon taut before fixing it.

The size of the opening, I think, should be the entire diameter of the bowel. This gives some sphincter-like action to the end. It has occurred to me that we might employ here the operation of Gersung for incontinence of feces from the anus—that is, rotating the bowel a full circle before suturing it. It has been shown that when incontinence is present an efficient sphincter can be made in this way, and one that will control liquid feces.

Dr. John B. Roberts: A limited experience with both operations leads me to strongly favor the inguinal method. I feel, with Dr. Morton, that the important thing is to obtain the spur. I do not see how that can be easily done without using some form of support and bringing the mesentery out of the wound. I think it a most important feature. I prefer when it can be done, to wait a few days for adhesions to take place. In opening the bowel I am inclined to prefer cutting entirely across.

Dr. Packard: With regard to the making of a spur, it has never been necessary in any of my own cases, and I think it can only exceptionally be of advantage. If the opening made is sufficient the feces will escape easily through it, and the lower part of the bowel has been, in my cases, kept quite free from irritation by them. Of course if a spur is to be made the bowel must be drawn clear out.

As stated in the report of my cases, there was, in the third especially, still some tendency to prolapse in spite

of the drawing down of the bowel, and I should be glad to know of some other way of preventing it.

I am aware that Allingham advises complete section of the bowel, but this seems to me to add to the gravity of the operation without adequate advantage.

A properly adjusted pad ought to keep its place without trouble.

DR. JAMES COLLINS detailed "An Observation of the Effects of Erysipelas on Epithelial Cancer": About eighteen months ago my attention was called by Mr. M. to an ulcer on his right cheek nearly opposite the ear. This ulcer was one and a half inches in its longest diameter, one inch in the shorter, and presented an oval outline with irregular edges. The discharge was slightly purulent and tinged with blood. The granulations were soft and bled on the slightest touch.

Mr. M. stated that twenty years ago there appeared at this point a small elevation, which frequently formed a scab, which every ten or twelve days would fall off and then re-form, and, giving but little trouble, received but little treatment.

Nineteen years ago he was treated for a time with ointments and lotions, also some medicine was administered without special benefit. The ulcer gradually increased in size and depth. Some benefit was derived from a lotion of zinc sulphate and salt, dissolved in water to make a mild astringent solution. The ulceration, however, continued giving inconsiderable pain, but much annoyance by its presence.

About November 12, 1893, he suffered from an attack of erysipelas of the face. This ran no unusual course, spreading rapidly from the tip of the nose over the scalp to the nape of the neck. The efflorescence was followed by desquamation. An external dressing of ichthyol and lanolin was applied and afforded relief and comfort.

As the erysipelas faded the ulcer seemed to assume a more healthy appearance. Granulations of a more nearly normal character developed, and in about two weeks the ulcer was entirely healed. The cicatrix on March 1st was slightly indurated, but smooth and firm, presenting the appearance of normal cicatricial tissue.

This case is reported without special comment, as a single case from the practice of a surgeon is but of little value, isolated and alone.

DR. JOHN B. DEAVER: I now have a patient with osteo-sarcoma to whom I have given the toxin of erysipelas, but it seems to have no effect.

DR. ORVILLE HORWITZ: I have had three cases—two of sarcoma and one of carcinoma—treated by the hypodermatic injection of the toxin of erysipelas. In the case of carcinoma and in one case of sarcoma there was no benefit. In the third case the mass involving the side of the neck has become much softened, and it looks as though some improvement were taking place.

DR. PENROSE: My experience is limited to one case of inoperable carcinoma of the right superior maxillary which had existed some two years. Three or four operations had been done, but the disease had finally gotten beyond bounds. Last spring this woman accidentally acquired erysipelas, and had one of the worst attacks that I have seen, but it had no effect on the neoplasm. The progress of the growth has been the same as before. The beneficial effect of this antitoxin is limited almost exclusively to the softer forms of sarcoma—to sarcoma of the soft parts.

DR. JOHN B. DEAVER read a paper entitled "Vaginal Hysterectomy": *Symptoms.* The symptoms of carcinoma of the cervix may at first be so slight that the patient will pay no attention to them, but will attribute the sensations experienced to the change of life or menopause, at which time carcinoma in this locality usually makes its appearance. From the insidious character of the invasion, considerable involvement will generally have taken place ere the case comes to the notice of the attending physician or surgeon. A slight hemorrhage is noticed, following exertion or coitus, and occurring in the interval between the menstrual periods. This usually does not alarm the patient until it becomes a frequent occurrence. It has been compared to the hemoptysis of early pulmonary tuberculosis, but is unlike this from the fact that there is no active, destructive change going on as yet. A leukorrheal discharge is present, although without the characteristic odor. In the first stage the general or constitutional manifestations of carcinoma do not present themselves. Pain, however, is one of the earlier symptoms. There may be disturbance of either the digestive or the nervous system, or of both.

Following this preliminary stage there is usually a period of latency, in which the disease seems to "rest upon its oars," prior to the second stage, when all the symptoms are present in a marked degree. The hemorrhages are more frequent, and at times are profuse. There is also present a sero-purulent, irritating discharge, with a penetrating, foul odor, and by contact with the internal and external genitalia giving rise to irritation and pruritus, which often cause as much distress as the primary disease. The pain is severe and radiating in character, and is felt most in the lumbar region. The uterus may be fixed or movable; as the disease progresses the uterus becomes fixed by extension of the disease to the surrounding pelvic structures. Examination with the speculum is often unsatisfactory, unless ulceration or granulation-tissue be present; the finger more readily detects the changed character of the tissue, recognizing the neoplasm from its consistency.

The general condition of the patient during the second stage undergoes a marked change. The digestion is very much impaired; anorexia, constipation, etc., are present, and give rise to systemic malnutrition. As a result of this general disturbance, what is known as the "cachectic stage" makes its appearance. The skin is dry and rough, and its color is changed to a muddy, yellowish-brown tint.

Diagnosis. The conditions from which carcinomatous disease of the cervix must be differentiated are the following: Lacerated cervix, with cervical catarrh; erosion of the cervix; specific ulceration; mucous patches; papillary growths; vaginitis; myoma; and sarcoma.

The diagnosis of cervical carcinoma is in the main easy, as the cases are usually seen after positive ulcerative and other gross changes have taken place. When there is simply thickening of the mucous lining of the cervix, with infiltration of the walls, and particularly when the cervix has been torn, it becomes somewhat difficult to differentiate the condition from a long-standing case of cervical catarrh. When, in addition to these features, the cervix presents a nodular appearance from

occlusion of the cervical glands, the difficulty is increased. This last condition, however, should not be mistaken for carcinoma, as the nodules are characteristic of malignant infiltration.

If ulceration is present, and the ulcers present a punched-out, ragged appearance, bleeding freely on the slightest touch, suspicion should be aroused. On the other hand, ulceration consequent upon erosion of the cervical mucous membrane is regular in outline and the surface of the ulcer smooth.

Specific ulceration of the cervix, chancral and chancroidal, is rarely seen, and bears little or no resemblance to carcinoma, and in connection with the history of the case, age of the patient, etc., should not cloud the diagnosis.

Mucous patches and papillary growths are more likely to be confounded with the disease than the two preceding conditions; these are, however, distinguishable in that they are more numerous and more widely distributed.

The discharge which accompanies vaginitis in no way resembles that resulting from carcinoma.

Myoma of the cervix might be confounded with a single carcinomatous nodule, but differs from the latter in the absence of infiltration, inflammation, and adhesion of the overlying mucous membrane.

In incipient carcinoma of the mucous lining of the uterus before the body has become involved, the only symptoms are the presence of a sero-sanious discharge, not necessarily accompanied by odor, and the general appearance of anemia, with debility and digestive disturbances. Pain may or may not be a feature of the case. These indefinite symptoms, together with the failure to respond to well-directed treatment, and the absence of disease of the uterine adnexa, should warrant dilatation and curettement for purposes of diagnosis.

In carcinoma of the body of the uterus the presence of a sero-sanious discharge with the characteristic odor, associated with frequent hemorrhage and enlargement of the fundus, would warrant curetting and microscopic examination of the particles of tissue removed. This may be done without anesthesia.

Sarcoma of the uterus is capable of giving rise to symptoms similar in many respects to those of carcinoma. While it is not always possible to differentiate between these affections, each has symptoms peculiar to itself.

The symptoms in favor of sarcoma are the presence of a rapidly growing tumor of the uterus appearing rather earlier in life than carcinoma; hemorrhage, which is more or less constant; and severe pain.

The diagnosis of sarcoma can often be established by a digital examination, when the cervix will be found less patulous than in carcinoma, the tumor presenting the form of a polypoid growth. It may be necessary to dilate the cervix to explore the interior of the uterus, when, if a mass be found, a portion of it may be removed and examined.

Prognosis. As to the probable outcome of vaginal hysterectomy for carcinoma, it is too early in the history of the operation to draw definite conclusions, but the results thus far have proved that especially early and even later operation prolongs life. There is no doubt but that removal of the uterus for carcinoma, if done early, offers a longer immunity from return than does operation for the same disease in other parts of the body.

Complications. Fatal attacks of uremia may follow, though it is rare to have eclamptic convulsions.

By extension of the disease the bladder and rectum become involved, and as a result cystitis or vesico-vaginal or recto-vaginal fistulæ may arise to aggravate the already deplorable condition of the patient. Peritonitis from extrusion would cause a speedy termination of the case, as would an embolus.

Pregnancy is a dangerous complication, as septicemia or fatal hemorrhage is likely to ensue if the case be permitted to go to full term.

Anatomic relations. The relations of the ureters are of so much importance in this operation that I have thought it worth while to describe their course. They extend from the termination of the pelvis of the kidney to the bladder, passing through the laminæ of the subperitoneal connective tissue. Their average length is about twelve inches. At their commencement they lie about three inches apart, but on nearing the base of the bladder they run forward and inward and pierce its wall, and at their termination are separated by a distance of about an inch and a quarter. We may describe them as consisting of three portions—viz., abdominal, pelvic, and vesical. The abdominal portion is in relation posteriorly with the psoas muscle and its fascia, the genito-crural nerve, and the common iliac artery. Anteriorly they are covered by the peritoneum, and the right ureter lies partly under the caput coli and ascending colon, and the left under the descending colon and sigmoid flexure. About the middle of their course they are jointed by the ovarian vessels, which cross them to descend into the pelvis along their outer border. At the brim of the pelvis the right ureter lies just behind the peritoneum, where it can be seen, with the ovarian vessels. The relations of the ureter to the sigmoid flexure depend entirely upon the length of the meso-sigmoid. Thus in one case the ureter may lie behind the sigmoid vessels, and in another directly behind the intestines. After crossing the psoas muscle it passes obliquely over the common iliac artery above its bifurcation, dropping into the pelvis at this point.

The pelvic portion runs in front of the sacro-iliac synchondrosis, then upon the obturator internus muscle and its fascia, finally leaving the pelvic wall to join the bladder. It lies at first usually to the inner side of the internal iliac artery, subsequently to the outside, and is again crossed by the ovarian veins and artery, which leave it at an acute angle. It then descends in the lower cellular tissue to the floor of the pelvis in a forward direction, passing directly under the uterine artery, and through the uterine plexus of veins and beneath the base of the broad ligament. Finally it crosses the upper third of the vagina to reach the vesico-vaginal interspace, and pierces the bladder opposite the middle of the vagina.

The vesical portion, about half an inch in length, runs obliquely downward and inward through the coats of the bladder to open on the mucous surface at a distance of from an inch to an inch and a quarter from its fellow, and the same distance from the internal urinary meatus.

The uterine artery leaves the lateral pelvic wall at a point just above the ischial spine, reaches the vaginal

wall at the level of the os externum, and then runs upward along the side of the uterus to reach the fundus.

Preliminary treatment. Much depends upon the preparation of the patient for operation. The most careful antisepsis of the vulva and vagina should be carried out. It is the practice of some surgeons to have the hair covering the soft parts removed; I do not believe this necessary if this region be thoroughly scrubbed twice a day with some good detersive soap for two or three days prior to the operation. The vagina should be cleansed with soft soap, and then both the external genitals and the vagina irrigated with a 1 : 60 carbolic acid solution containing an amount of mercuric chlorid to make it equivalent to 1 : 4000. The bowels should likewise be carefully regulated, and a mild laxative administered for a few days before operation, to thoroughly clean out the lower end of the alimentary canal. If there be present granulations covering the cervix or occupying the uterine canal, or should the cervix be eroded and there be a fetid discharge, it would be wise at first to curet away the granulation-tissue exciting the discharge, and subject the vagina to mercurial irrigations twice or thrice daily, the frequency depending on the character of the discharge.

Methods of operation. In the operation of vaginal hysterectomy one of three methods is practised—the clamp, the ligature, or enucleation (Langenbeck's). There is no doubt but that the method by enucleation is the ideal one, and should be adopted when the case is suitable for it.

The enucleation-method consists first in liberating the cervix by carrying two elliptic incisions through the vaginal wall in front of and behind the cervix, or by a circular incision carried around the cervix, the dissection being made close to the cervix. This should be the rule whatever method be employed. In the removal of tumors of the neck in the immediate neighborhood of large vessels, or, in fact, of any tumor occupying important vascular relations, the surgeon follows the practice of dissecting close to the tumor. The second step in the enucleation-method is in making a subperitoneal dissection of the uterus. I think this should be the operation of choice, in the early cases at least.

Between the clamp-method and the ligature-method there is in my mind no doubt of the superiority of the latter. I grant that there are a few cases in which the clamp-method is probably the better operation, but these constitute the exception. The ligature-method of vaginal hysterectomy is as much superior to the clamp-method as is the dropping of the stump in the supra-vaginal method after having tied off the uterine appendages and ligated the uterine arteries over that of the *serre-nœud*. The ligature is surgical, while the clamp compared to it is unsurgical.

In the selection of any operation, that which will leave the patient the most comfortable, not, of course, exposing her to a single additional risk, should in my judgment be the one of choice. I am frequently confronted with the argument: "Why, the clamp-method can be done in fifteen minutes and less." In answer to which my reply is: The ligature-method can be done in from thirty to forty minutes. The question of a few moments in doing the operation is of no import, as, if the case is suitable for hysterectomy, there will be no shock. The loss of blood in the ligature-method, if done properly, is no greater than in the clamp-method, and the security against secondary bleeding is much greater. The ligature-method is one that can be made a strictly aseptic one, and maintained so throughout, while in the case of the clamp there is always some suppuration following, thus exposing the peritoneum to infection from without.

The question may arise: Why not close the wound in the vault of the vagina? The wound closes itself. I have observed, and have demonstrated after the removal of the uterus, the almost perfect apposition of the cut surfaces; and have, therefore, never been able to see the necessity of introducing sutures. If bleeding follows reaction from the anesthetic, and the wound in the vagina has been closed by sutures, the closure may be the cause of a subsequent abscess, while in allowing the edges of the wound to appose naturally, and introducing a little packing of iodoform-gauze into the vagina, not carrying it into the pelvic cavity, the blood finds its way into the vagina and is taken up by the gauze. By the time reactionary or consecutive bleeding, if you see fit to call it such, would occur, the wound in the vagina would not yet have been sealed off; therefore it finds its way out of the pelvis.

In either the ligature-method or the clamp-method, when the cervix is entirely destroyed, thus making it impossible to grasp it with a vulsella or pressure-forceps to pull the uterus down, my practice is to introduce a tenaculum into the uterus, by which I am able to make slight traction, and thus steady the organ; this allows me to free the vaginal walls and expose the supra-vaginal portion of the cervix, which I grasp with the vulsella, and thus command the uterus through the remaining steps of the operation.

Operation. The bowels and bladder having been emptied, the patient is anesthetized and placed in the lithotomy-position, with her limbs held by assistants. A Sims' speculum is introduced and the cervix uteri exposed. The cervix is then grasped either with a vulsella or a pair of pressure-forceps, the latter being less likely to slip or tear out. Traction is made upon the uterus, drawing it downward and forward to expose its under surface. An incision is carried across the exposed surface to the situation of the internal os, or as far away from the eroded tissue as possible, and with the fingers the posterior wall of the vagina and the areolar tissue are freed, from the uterus down to the peritoneum. The forceps holding the uterus is then carried downward, and the incision continued to make it encircle the organ. The structures in advance of the uterus are dissected away in the manner described, great care being observed to keep close to the body to prevent injury to the bladder; having reached the vesico-uterine folds of the peritoneum, the vagina is thoroughly irrigated. The recto-uterine and vesico-uterine folds of the peritoneum are now broken through, and, if the operator so desires, a small piece of gauze or sponge may be introduced to prevent prolapse of the intestine; this I do not believe, however, to be essential. The female blade of the clamp is then introduced along the palmar surface of the finger, which acts as a director. The blade of the clamp is made to hug the under surface of the broad ligament, and the end of the blade is made to pass beyond its upper limit. The handle is depressed to make the end

appear above the upper surface of the ligament, the other blade introduced, and the clamp locked. The opposite side having been treated in the same manner, the attachments are severed and the uterus removed. Should difficulty be experienced in applying the second clamp, the attachment of the side already clamped may be severed, and the body of the uterus loosened and delivered, when the clamp can be easily applied.

A piece of sponge or gauze is introduced, and the vagina is irrigated; gauze is loosely packed around the clamps to prevent ulceration of the soft parts from pressure, and a light packing is placed in the vagina to act as a capillary drain.

The clamps may be removed at the end of the second or third day. In removal of the uterus by the ligature-method the early steps are the same as in the clamp-operation. Having freed the uterus from all its surrounding tissues except the broad ligaments and the peritoneum covering the fundus, the vagina is thoroughly irrigated. The broad ligaments are now to be ligated. An aneurism-needle, curved on the flat and set at right angles to the handle, is threaded with a silk ligature and passed through the base of the right broad ligament a short distance from the cervix; this secures the uterine artery. Successive ligatures are then applied until the entire ligament is tied off. As each ligature is tied the included portion is cut free from the uterus. Having ligated and secured the right ligament, the left is treated in the same manner.

If there be an elongated body, as is often found in uterine carcinoma, great difficulty may be experienced in ligating the entire ligament upon one side without tying off and removing a portion of the ligament of the opposite side. By adopting this course the organ can be pulled down and the remaining ligatures easily applied. As the ligatures are being tied down the traction of the uterus should be relaxed. The uterus having been freed from its ligamentous attachments, the peritoneum is broken through and the organ removed.

After the uterus has been removed, it is the custom of some surgeons to close the opening in the vagina. I do not practise this. The cut surfaces approximate themselves, and further favor drainage if we simply pack the vagina and do not stitch.

Report of Cases.

Case I.—Mrs. C., aged thirty-five years, was admitted to the German Hospital with an extensive carcinoma of the cervix, which had recurred after a previous curetting and now demanded the removal of the whole organ. The patient was carefully prepared for operation, receiving several antiseptic douches daily for a few days, and also boric-acid baths. The anterior and posterior walls of the vagina were carefully dissected up, and the uterus freed and its broad ligaments tied off in sections. The ovaries were removed with the uterus. A light packing of iodoform-gauze was introduced into the vagina.

The patient made an uninterrupted recovery, and was discharged in three weeks.

Case II.—A. B., aged forty years, and unmarried, was admitted to the German Hospital with the following history: For some time past she had been suffering from profuse uterine hemorrhage. The menstrual flow was excessive and painful. A diagnosis of carcinoma of the uterus was made, and total removal of the organ advised.

Operation. The mucous membrane of the anterior vaginal wall was dissected up until the fundus of the uterus was reached. The posterior wall was treated the same way. The broad ligaments were tied off in sections—four on either side of the uterus, which was now removed with the ovaries and tubes. The ligatures were cut short. A light packing of iodoform-gauze was introduced into the vagina, and a pad placed over the vulva. The packing was changed on the fourth day; on the seventh day a slight odorous discharge was noticed, which disappeared on the twentieth day after the operation. There were no signs of peritonitis.

The patient was discharged on the twenty-fourth day. Microscopic examination of the specimen proved the correctness of the diagnosis—carcinoma at an early stage.

Case III.—Mrs. K. G., aged thirty-five years, was admitted to the German Hospital with a history of curetting at another institution for carcinoma of the cervix. At the time of admission a granular mass was found involving the entire cervix. She was again curetted. Six days later vaginal hysterectomy was performed.

Operation. The cervix was drawn down by means of a tenaculum, and a silk thread introduced through both lips. The anterior vaginal mucous membrane was carefully dissected up from the exterior surface of the uterus. The posterior surface was similarly treated. The smallness of the vaginal cavity complicated the enucleation considerably. After the uterus had been freed of the vaginal mucous membrane, clamps were applied to the broad ligaments. The organ was removed by cutting between the uterus and the clamps. The part was irrigated with a boric-acid solution, and the vagina packed with iodoform-gauze. An antiseptic pad was applied to the vagina. The clamps were removed on the fourth day. Recovery was uninterrupted.

Case IV.—Mrs. K., aged thirty-four years, was admitted to the German Hospital with a granulating mass of the cervix. An attempt was made to curet the mass away, but it was found to be too extensive.

Operation. The cervix was firmly held with a vulsella-forceps. The anterior vaginal mucous membrane was dissected away from the uterus. The posterior surface was treated similarly. The broad ligaments were tied off in sections—three ligatures upon either side of the uterus, which was now removed; the vagina was irrigated and packed with iodoform-gauze. The dressing was removed on the eighth day, the parts irrigated, and another dressing applied. The patient made a successful recovery, being discharged upon the fourteenth day.

Dr. C. B. Penrose: In the diagnosis of doubtful cases I have found dilatation and curetting unsatisfactory in most cases. We may be obliged to rely on these in carcinoma of the fundus, but in suspected carcinoma of the cervix I think that it is better to cut out a wedge-shaped piece. I have done this in fifteen or twenty instances, and in many of them have recognized carcinoma in its early stages.

I prefer removal through an abdominal incision in all cases, if necessary making a preliminary incision in the anterior and posterior vaginal fornices in order to be

sure that all infiltrated tissue in the vagina is removed. By this method you can more readily deal with any complications that may arise.

DR. DEAVER: I quite agree that the removal of a portion of the cervix for diagnostic purposes is more reliable than curettement; but this is not applicable in all cases.

I should like to hear from Dr. Penrose what is the status of removal of the tubes and ovaries in these cases. I always attempt to remove them because I see no advantage in leaving them. I should like to know if this lessens the liability to recurrence. The ovaries, however, do not hold the same relation to the uterus that the lymphatic glands do to other structures.

DR. PENROSE: I think that the chief reason that it is desirable to remove the tubes is that in from 25 to 30 per cent. there is extensive disease of the tubes, not necessarily malignant, however. The ovaries, I think, in young women might be left in order to preserve the ovarian influence.

(To be concluded.)

NEWS ITEMS.

Pennsylvania State Medical Society.—The following scientific program has been arranged for the meeting to be held in Philadelphia, May 15, 16, 17, and 18:

Annual Addresses.—Medicine, W. S. Foster, Pittsburg; Surgery, G. D. Nutt, Williamsport; Obstetrics, E. E. Montgomery, Philadelphia; Mental Disorders, T. M. T. McKennan, Pittsburg; Hygiene, J. H. Wilson, Beaver; Ophthalmology, George E. de Schweinitz, Philadelphia.

Medical Papers.—Charles W. Dulles, Hydrophobia; H. F. Slifer, Dietetics; John M. Batten, Unique Cases in Practice; W. C. Hollopeter, Therapeutics of Whooping-cough; William P. Munn (Denver, Col.), Colorado Climate for Consumptives; R. G. Curtin, Subcutaneous Emphysema; John Aulde, Diarrheal Diseases; Wharton Sinkler, Acroparesthesia; Adolph Koenig, Typhoid Fever; W. E. Hughes, Tapping of Abdominal Effusions as a Therapeutic Measure.

Surgical.—E. Laplace, Radical Cure for Hernia; F. Le Moyne, Modification of Pirogoff's Amputation; X. O. Werder, Surgery of the Gall-bladder; T. S. K. Morton, Section of Tendo Achillis in Fractures and Dislocations; John B. Deaver, Appendicitis; G. G. Davis, Amputation near the Ankle; O. Horwitz, Stricture of the Urethra; Charles W. Dulles, Treatment of Fractures at the Lower End of the Humerus; J. M. Barton, Acute Intestinal Obstruction; Edward Martin, Ocular Exploration of the Bladder and Urethra; John B. Roberts, Thyroidectomy.

Obstetric and Gynecologic.—J. C. McAllister, Puerperal Eclampsia; Charles P. Noble, Uterine Fibroids; J. M. Baldy, Acute Endometritis; Anna M. Fullerton, Studies in Obstetrics and Gynecology; Horace Fox, Symphysiotomy and Other Procedures; B. F. Baer, Cholecystenterostomy.

Eye and Ear.—S. L. Ziegler, Corneal Ulcers; S. MacCuen Smith, Diseases of the Ear; H. F. Hansell, Surgical Treatment of Internal Strabismus; Charles H. Thomas, Eye-strain; Charles H. Burnett, Tympanic Vertigo; Louis J. Lautenbach, Massage-methods in the Relief of Tinnitus; L. Webster Fox, Capsulotomy after Removal of Cataract.

Nose and Throat.—W. H. Daly, Intra-nasal Surgery; William R. Hoch, Naso-pharyngeal Catarrh.

Skin.—J. V. Shoemaker, Clinical Observations; M. B. Hartzell, Epithelioma of the Skin.

Tuberculosis.—Arrangements have been made for a discussion on Medical and Surgical Tuberculosis, and papers will be read on Medical Tuberculosis as follows: S. S. Cohen, Curability and Treatment; J. M. Taylor, Psychic Phases; A. M. Cooper, Contagiousness; L. F. Flick, Prophylaxis; Hugh Hamilton, Medical Tuberculosis; T. J. Mays, Strychnin-treatment of Pulmonary Consumption; D. Longaker, Case of Tuberculous Meningitis.

The following members of the Society have announced their wish to take part in the discussion on Medical Tuberculosis: J. H. Musser, W. B. Ulrich, J. C. Wilson, J. S. Cohen, and W. E. Hughes.

The following papers on Surgical Tuberculosis will be read: C. B. Penrose, Tuberculosis of the Fallopian Tubes; H. A. Wilson, Treatment of Tuberculous Caries of the Spine; E. B. Haworth, Case of Tuberculosis of the Knee-joint.

The following members will take part in the discussion on Surgical Tuberculosis: J. B. Roberts, DeF. Willard, G. G. Davis, J. K. Young, J. M. Barton, and B. F. Baer.

Tuberculous Manifestations of the Skin will be discussed by H. W. Stelwagon.

Besides these, the following papers on general subjects are announced: Hildegarde H. Longsdorff, Christian Science and the Medical Profession; S. S. Cohen, Should the Journal of the American Medical Association be Used to Promote Quackery? E. Jackson, Reasons for the Revision of the Code of Ethics; O. H. Allis, Cramming in Medical Schools.

The committee has obtained the consent of Dr. Benjamin Sharp, of the Academy of Natural Sciences, to exhibit to the Society his beautiful series of lantern pictures of the leper settlement at Molokai, Sandwich Islands, and of lepers in various stages of the disease.

Resident Physicians at the Methodist Episcopal Hospital of Philadelphia.—An examination for two resident physicians at the Methodist Episcopal Hospital of Philadelphia will be held on Thursday, May 3, 1894, at 7.30 P.M., at the Hospital, Broad and Wolf Streets.

One of the officers thus selected will go on duty August 1, 1894, and serve twelve months. The other will go on duty September 1, 1894, and serve for thirteen months.

In accordance with the charter of the Hospital, applicants must have the degree of Bachelor of Arts, in addition to that of Doctor of Medicine. Further information may be obtained from John B. Roberts, M.D., Chairman of the Committee on Examinations, 1627 Walnut Street, Philadelphia.

The Wisconsin State Medical Society will hold its forty-eighth annual meeting at Milwaukee, May 2, 3, and 4, 1894.

Correction.—In the 26th line from the top of the second column of page 389 of THE NEWS of April 7, 1894, the figures "100,000" should read "1000."

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ORIGINAL ARTICLES.

CONCERNING THE HISTORY OF THE DISCOVERY OF REFLEX OCULAR NEUROSES, AND THE EXTENT TO WHICH THESE REFLEXES OBTAIN.[1]

BY S. WEIR MITCHELL, M.D.,
OF PHILADELPHIA.

You are well aware that you touch the general practice of medicine at many points, and very often are most helpful, but, sometimes, because of being satisfied to think only of the eye, you may be quite the reverse of helpful.

Nowadays, except for obvious eye-trouble, you are most likely to be consulted as concerns headaches, and to be asked if they are in this or that case the offspring of disorders of the visual apparatus. Very frequently the patient goes directly to you, so that you become his only adviser, and it is as to this form of undivided responsibility that I shall have to speak before I close; for it is here that you sometimes fail to grasp the truth that he who has correctly glassed the eye may have left undone that without which his work loses much of its value.

Before dealing with more practical matters, I should like to call your attention to the general history of the connection of headaches and other neuroses with eye-strain. I am the more interested in doing this because I had a personal share in directing the attention of the medical public to this matter, and also because it is my firm belief that we of this city were the first to bring this relation into large practical prominence.

I am under the impression that Dr. Ezra Dyer and Dr. J. Haskett Derby, of Boston, were the first Americans to bring us home from Germany modern views as to corrections to be accomplished in disorders of the optic apparatus.

Dr. Dyer came here to live in 1862. From this accomplished oculist I learned a great deal in regard to the treatment of the eyes, and it was through certain cases thrown into his hands by me that I came first to understand more fully the mischief-making capacity of imperfect eyes.

I remember with great distinctness the earlier of the many important cases I saw with Dr. Dyer. Some of them made an immense impression upon my mind. One was that of a young woman whom I had known for many years to have exceedingly disordered eyes, and to be unable to use them for more than a minute at a time without pain. She suffered a great deal from headache, but although she had seen many physicians, neither they nor I, nor Dr. Dyer (whom she consulted as to her eyes), had any suspicion that the eyes were a factor in the product of pain. The headaches were entirely occipital. Dr. Dyer carefully glassed this young woman, merely to aid her vision, and shortly afterward, in some two or three months, she told me that her headaches had entirely disappeared, but that they returned if from any cause she was without her glasses for a few days.

This fact struck me very forcibly. Shortly afterward I met in consultation the late Dr. John F. Meigs, concerning the case of a young widow who had suffered for many years with extreme headache, pain down the spine, and also with what at that time I considered as hysterical retraction of the head. After we had talked the case over, Dr. Meigs said to me that his medical resources were exhausted as to this case, and that he did not know what caused the headaches. I then asked if they might not possibly be due to what at that time I was beginning to call "eye-strain." He said it was possible, but that he had never met with or heard of such a thing. I got his ready consent to refer his patient to Dr. Dyer. Careful correction wiped out these headaches. The stiffened muscles at the back of the neck relaxed, and four months afterward this woman was in better health than she had been since childhood. These, and other cases, at last opened my mind to a distinct conception of the frequency of the relation between disorders of the apparatus of the eyes and headache or other neursoses.

As Dr. Dyer's practice enlarged, and as physicians began to have more and more confidence in methods of correcting the eyes, I, too, learned still more of these interesting difficulties. I think the knowledge that a headache might be due to ocular troubles was becoming pretty well diffused among the more intelligent of the profession in Philadelphia, when, in the *Medical Reporter*, in 1874, in writing of headaches, I described headaches from eye-strain, and gave several cases at length. These cases were corrected by Dr. Thomson. The cases seen with Dyer occurred as early as from 1862 to 1864; I cannot more surely set the dates. I then got the impression,

[1] An abstract of remarks before the Ophthalmologic Section of the College of Physicians of Philadelphia, March 26, 1894.

which I still retain, that hemicrania of the classic type, although it may be increased and made worse by ophthalmic defects, rarely owes its existence to this alone, and that headaches of eye-strain are usually of quite different type.

I did not again write on the subject until 1876. In April of that year I published a paper in the *American Journal of the Medical Sciences*. There I announced the following conclusions, having learned that not only headaches, but vertigo, nausea, anemia, and much disturbance of the general health, might be due to difficulty of the eyes.

Conclusions as to Headaches from Eye-strain.

1. That there are many headaches which are due directly to disorders of the refractive or accommodative apparatus of the eyes.

2. That in some instances the brain-symptom is often the most prominent, and sometimes the sole prominent symptom of the eye-troubles, so that while there may be no pain or sense of fatigue in the eye, the strain with which it is used may be interpreted solely by occipital or frontal headache.

3. That the long-continuance of eye-troubles may be the unsuspected source of insomnia, vertigo, nausea, and general failure of health.

4. That in many cases the eye-trouble becomes suddenly mischievous, owing to some failure of the general health, or to increased sensitiveness of brain from moral or mental causes.—*Am. Journ. Med. Sci.*, April, 1876.

It may be somewhat interesting to carry the history of the subject beyond this point. The knowledge of which I speak is perhaps one of the most valuable contributions to the relief of human suffering that has been made during the century. It is impossible to give the credit of this vast gain to any one man, and say that it was due to him alone. Helmholtz, Donders, and von Graefe made this relief possible by their scientific work, but neither in Europe nor here was there, so far as I know, in 1862, or much later, any practical conception among either oculists or physicians as to the frequent power of bad eyes to create headache and divers other troubles. No general physician then sent headache-cases to an ophthalmic surgeon, and my own paper of April, 1876, was, I think, the first contribution of importance to this subject made from the side of the general practitioner.

In fact, one looks in vain for many a day through the text-books on the eye, and the monographs on headache, for a statement of the imperative need to study the eyes in headache, vertigo, etc. If here and there we find a sagacious ophthalmologist speaking of the distress and pain which manifest ocular trouble occasions, the general text-books are silent as to a practical hint, and the profession at large remains ignorant.

Quite recently, in 1886, there appeared Ernest Clark's book on *Eye-strain*, and here is full confirmation of what I state, and, too, of Dr. Clark's entire failure to make clear our own share in the valuable discovery I am discussing. This author points out that fifty years ago Tyrell, in speaking of asthenopia, very well described its power to cause *headache*, *dyspepsia*, *vomiting*, *diplopia*, *vertigo*, and *palpitation*. He even employed the term *eye-strain*, its first printed use, I suspect, in connection with this subject.

I find in Dr. George Stevens' book on *Functional Nervous Diseases*, published in 1887, information which enables me to carry forward the history of this subject. He says, page 8: "No general principle of sympathetic or reflex irritation had, however, been formulated, and the first *printed* announcement of the existence of such a principle was made by myself, in a paper presented to the Albany Institute in the early part of 1876," ("On Some Results of the Anomalous Refraction of the Eyes"). It is difficult to understand this claim.

The paper to which Dr. Stevens alludes here as presented to the Albany Institute, was read by title before the Institute, May 30, 1876, and placed on file to be presented thereafter, but I do not find it anywhere stated in the *Transactions* or *Proceedings of the Albany Institute* that it was ever read or printed.

Soon afterward a paper, by the same author, was read before the Academy of Medicine in New York, June 15th of the same year ("Refractive Lesions and Functional Nervous Disorders"). This paper deals with the question of chorea chiefly. Dr. Stevens attributes a very large proportion of choreal cases to hypermetropia. As to this matter I shall have more to say before I close.

In the *New York Medical Record*, September, 1876, there is also a paper by Dr. Stevens upon the "Relations between the Anomalous Refraction of the Eyes and Certain Functional Diseases of the Nervous System," with a table showing the refractive condition of eyes in fifty-four cases of epileptic and insane persons. This paper deals with the facts that refractive errors are common in cases of epilepsy and the like, and with the great frequency with which refractive anomalies have been found in connection with recurrent headache. As to this matter, too, we have the later papers of both Drs. Stevens and Ranney, as to which I shall also have a few words to say before I close this present communication.

I find later, in the *New York Medical Journal* for June, 1877, a paper by Dr. Stevens ("Light in its Relation to Disease,") which I presume is the same as one before presented to the Albany Institute, December 19, 1876. It deals chiefly with the question of heredity in connection with faulty refraction of the eyes and other matters.

In looking over the later history of this matter I find that certainly one of the earliest distinct papers on the subject of astigmatism as causing headaches, was written by Dr. William Thomson in 1879.[1] After this, papers began to multiply in the eighties; but long before the general medical public had the least idea of this pathologic relation, these two gentlemen (Drs. Thomson and Dyer) had obtained a clear and practical grasp of the facts in question.

So much for the history of this matter; it has become an old story.

Now, the every-day practitioner called upon to treat a neurosis, especially a headache, habitually refers the patient to an ophthalmologist, and does not know whence came this inestimable lesson. I can remember to have heard it laughed at as utterly absurd.

Before leaving the subject I should like to say a few words as to the more recent claims made by Drs. Stevens and Ranney. Men who run into extremes are often those who in the end teach proportioned wisdom to such as know wisely to profit by the excesses of others. This is going to be the case in regard to the extreme views enunciated by these two gentlemen. There is in them an element of occasionally useful truth. Where they appear to me to have most distinctly failed I have endeavored to point out to the best of my ability.

At my clinic, for two years or more Dr. G. E. de Schweinitz examined with the utmost care the eyes of all of the numerous choreic children who appeared at the Infirmary for Nervous Diseases. The cases extended to one hundred, and although many of them have been given the most careful attention, I do not think that any notable good in the way of cure of chorea was obtained by correction of refractive or other errors. In the disorder I first described as "habit-chorea," glasses have now and then been found to be useful, but not always; nor should we expect to find anything else in regard to chorea proper. It is largely a disorder of seasons in the first place, and secondly it is a disease easy enough to treat. The great mass of cases get well without much difficulty; in a large number of instances the disease is self-limited, and gets well if let alone, nor has it the gravity which one would be led to expect from reading Dr. Stevens' early paper. Dr. de Schweinitz, who is present, will, I am sure, entirely agree with the conclusions I have reached as being his opinion and mine, to the effect that we have gotten no good by correcting the eyes in cases of chorea. I came to this matter with a perfectly free and unbiased mind, but this was the end. Choreal children with ocular defects got well under arsenic alone quite as soon as others who had no like disorder of vision; or the choreas got well, and the hypermetropia remained unaltered and unglassed.

And now as to epileptics I have met with no better fortune. As regards this, I have read with care the conclusions of Stevens and Ranney, and have wished I could have seen some of the epileptic persons whom they so successfully treated. Those who have treated epilepsy know that in some respects it is a very curious disease. If we take an obstinate epileptic case and put it suddenly under new conditions, in a new place, with altered diet and different surroundings, we occasionally find marked changes for the better, which are usually temporary. This is frequently the case at the Infirmary. When an habitual epileptic is put there for the purpose of being watched, in order to determine the quality of the spasm, weeks and even months may pass without the patient having an attack, when before this they occurred every day; and this, too, despite the discontinuance of all drugs. I know of two cases of men who had such attacks before entering the army, and under the new surroundings were entirely freed from them. These are the things which make neurologists careful in concluding for the value of a new agent in this sad malady until the cure has lasted a long while, and been observed with care. Still, there are cases found in Ranney's last contribution ("Eye Treatment of Epileptics," *New York Med. Journ.*, Jan. 13, 20, and 27, 1894) which seem to have ended in cures. I can only say that I have failed to obtain like results in our own attempts to cure epilepsy by the correction of refractive errors or by cutting tendons. I neither believe nor disbelieve. When I can see two or three cases of cure of undoubted epilepsy by tendon-clipping, I shall want to recommence. So far I have had only disappointment, and others here who began to cut tendons with enthusiastic hope, have, like me, got no good for their patients out of an industriously acquired experience in this direction. I shall be but too happy to drop the dubious mood in which I am as to this whole matter.

I believe, as regards tenotomy *versus* prisms, that these gentlemen have taught us a lesson which we may with moderation usefully employ. I have called your attention to the matter because I am well assured that if, as to tendon-cutting, the gentlemen whom I have so frankly criticised have gone too far, you, I think, have not gone far enough.

I have tried as to this whole matter to be fair and courteous, and yet to set the history right. As concerns too positive views of treatment, time alone will entirely settle these.

And now a word or two as to your own relations

[1] The literature before this must have been meager indeed. See American Medical Library Catalogue.

to the disorders in which we see ocular troubles, or as to those in which these are the cause of symptoms.

I trust the day has gone when you will put on prisms, or cut the tendons of ataxic cases without perceiving the spinal source of the defects; but a more lasting evil arises out of the fact that sometimes you do not comprehend the fact I have long tried to teach, that eye-strains lasting through the years of development may make permanent headaches which no glass will do more than partially relieve.

Again, you often see people who owe to ill health a suddenly intensified capacity to feel an eye-strain. You glass them and expect too much. Neither you, nor any specialist, can, or should, escape from a sense of larger responsibility, and if you cannot hold your patient when you have corrected the eyes, it is imperative that he learn from you the fact that he needs more than merely the best correction of the eyes. A careful study would often tell you that a man may have two or three forms of headache, and that it were well to understand that while your glasses may cure an occipital ache, for instance, he may still continue to have neuralgic hemicranial pain, or an occasional attack of gouty headache.[1]

I suspect that our own oculists are far in advance of the English and most Continental surgeons, in the care with which they correct defects in refractions. I fancy that they sometimes fail to get the best possible results because of difficulties due, it may be, to personal peculiarities in patients, or sometimes to the belief that slight muscular defects may be let alone when the refraction has been accurately corrected.

THREE CASES OF CHRONIC TINNITUS AURIUM AND TYMPANIC VERTIGO RELIEVED BY REMOVAL OF THE INCUS.[2]

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THE following cases were operated upon primarily to rid the patients of intensely annoying tinnitus and ear-vertigo, dependent upon so-called chronic catarrh (sclerotic) of the middle ear. Incidentally we may learn something about the effect of the operation upon the hearing, which is always reduced to a low point in chronic tympanic vertigo. The deafness in such cases, however, is disregarded by the patients in their eagerness to obtain relief from tinnitus aurium and aural vertigo.

CASES XIII AND XIV.[3]—Mr. W. R. P., of Philadelphia, aged fifty-eight, formerly a sea-captain, now a salesman in this city, was brought to me October 11, 1893, by his family physician, Dr. M. G. Tull. It was stated that the man's hearing had begun to fail fifteen years previously, first in the left ear, and then in the right. A year ago the patient began to have added to his other symptoms of chronic catarrh of the middle ears, more tinnitus aurium and some ear-vertigo. The vertigo was at first not very bad nor very frequent; gradually, however, the attacks became more frequent and more intense, until for three months preceding his first visit to me the vertiginous attacks had nearly incapacitated him for business. He has never fallen, but he has been obliged to sit down in the street and to hold on to objects in the street to keep himself from falling, as these attacks have occurred without warning. The vertigo has usually been followed by more or less nausea.

Otoscopic examination of the ear revealed retracted but not thickened membranæ. The incus was visible through each. Hearing in the left ear was *nil;* in the right ear by means of the ear-trumpet only. The tuning-fork was not heard *per ossa* in either ear. The membranæ were found restricted in their movement under the pneumatic speculum.

Retraction of the ossicles and impaction of the stapedes were diagnosticated as the cause of the tinnitus and vertigo, and removal of the incudes was advised as the only means of liberating the stapedes and overcoming the labyrinthine pressure caused by the stapédial impaction in the oval window. The removal of both incudes seemed advisable, as both ears being similarly affected it was deemed that lesions in both might contribute to the causation of the tympanic vertigo. On October 16, 1893, both incudes were removed, the patient being under ether. By November 1st the right membrana had healed, and the man could hear conversation close to his ear without an ear-trumpet. A little tinnitus existed.

The day after the removal of the incus the patient could hear the voice close to the left ear, which had been impossible before. This ability, however, gradually disappeared before the membrana closed.

Two months after the operations on the tympana the patient reported feeling a little tinnitus in both ears, *but no vertigo since the operations.* The tuning-fork was heard *per ossa* in both ears. He depends upon his right ear for hearing, aided by the trumpet, in business, but at home he uses his ear without this aid much of the time.

When I was a student of otology in Vienna, over twenty years ago, Politzer showed his class a few cases of what he denominated "traumatic catarrh" of the middle ear, resulting from falls or blows. In this affection the deafness, tinnitus, etc., are not considered dependent upon a lesion of the nerve in the labyrinth, but upon trophic disturbances in the middle ear. The treatment recommended was the

[1] See International Clinics, vol. ii, on Permanent Headaches.

[2] Read before the Section on Otology and Laryngology of the College of Physicians of Philadelphia, March 6, 1894.

[3] Cases I–X were detailed in THE MEDICAL NEWS, May 13, 1893, p. 509, and Cases XI and XII in THE MEDICAL NEWS, September 30, 1893, p. 374.

same as that for non-traumatic catarrh of the middle ear. As far as I could discern no relief was ever given these cases by the ordinary routine treatment of chronic catarrhal otitis media. Since the time I allude to I have seen a number of cases of so-called "traumatic" catarrh of the middle ear, which I have failed to relieve of any of their symptoms by the ordinary remedies.

Although the etiology and pathology of these cases of "traumatic" catarrhal otitis media are obscure, I concluded at last that the lesion in such instances must lie in adhesive inflammation in the tympanum and about the ossicula, induced by the traumatism. This condition would be competent to bring about a retraction of the entire chain and consequent impaction of the stapes in the oval window, with pressure upon the labyrinthine fluid. Therefore it seems just to conclude that liberation of the stapes, or even its entire removal, in such cases would afford relief from the tinnitus and vertigo. This supposition has been to some extent justified by the results of removing the incus in the following two cases:

Case XV.—Mr. C. S., of Philadelphia, aged sixty years, was sent to me October 2, 1893, by Dr. Lawrence Wolff, with the statement that four months previously the patient had "fallen down stairs and sustained a concussion of the brain, and probably some fracture about the base. He is since deaf in the right ear, and has great tinnitus and throbbing in it." The patient stated that in his fall he had struck the top of his head, but that there was "no cutting of the scalp." He seemed to have been attacked with vertigo, without any reason assignable on his part, just as he was going to bed, and hence the fall. He was unconscious two weeks. Immediately upon recovering consciousness he noted tinnitus and deafness in his right ear, which, he said, had been perfectly well before the accident. After getting up and walking about he had attacks of uncertainty of gait. Tinnitus and deafness have been constant since the accident.

Examination with the otoscope showed that the membrana in the right ear was crinkled and white. Under Siegle's pneumatic speculum the malleus was found to be immovable, but the posterior half of the membrana was easily movable under this test. The pneumatic suction of the ear caused the ear to "feel better," but did not quell the tinnitus. The opposite membrana tympani was white and lusterless, but the hearing perfect in the left ear.

The case was diagnosticated as one of "traumatic catarrh" of the middle ear, productive of deafness, tinnitus, and vertigo. The removal of the incus was suggested as the only means in my power to relieve him, and this was acceded to by his physician, Dr. Wolff, and himself.

On October 23, 1893, under ether, the posterior superior quadrant of the membrana tympani was cut away from its peripheral attachment, and the incus exposed to view. This was easily detached from the stapes, but it was so adherent to its attachments in the attic and on its outer surface with the inner surface of the tympanic ring that considerable traction was necessary in order to remove it from the tympanic cavity. By October 25th there was no reaction in the drum-cavity, less tinnitus, and the gait was more steady. On October 28th, the man slept much better because of the lessening of the tinnitus, which was scarcely appreciable. The patient walked much better. On October 30th there was a little discharge from the drum-cavity, probably due to the tearing of the adhesions about the incus at the time of its removal. There was no pain in the ear, however.

On October 31st, the patient said that he had had great pain in his head and right ear the night before, with very little tinnitus. There was not much discharge from the drum; the jaw was stiff. Possibly the patient took cold while standing in the street looking at a night parade forty-eight hours previously, or perhaps the inflammation was due to the tearing of the adhesions about the incus at the time of its forcible removal.

By November 7th, the membrana had healed; there was very little tinnitus, and he felt much freer in the head than at any time since his accident.

In this case the tinnitus has recurred at times with severity during the past two months, followed by periods of lessening. There has, however, been no pain in the ears or head. The gait is permanently better, but the tinnitus has not been as much relieved as in the following case. The hearing has not been improved. Suction upon the membrana, which is sunken in the posterior superior quadrant, relieves the tinnitus markedly. The relief may continue for hours. The adherent incus in this case leads to the inference that in the healing of the synechiæ, severed when the incus was removed, the stapes may have become involved and still more or less impacted in the oval window.

The relief now given by the rarefaction of the air in the canal by Siegle's speculum would seem to indicate that there is still some retractive force acting on the stapes, perhaps through the depressed quadrant in the membrana, and mediately thence through the synechiæ still left in the region formerly occupied by the incus, and pressing with varying vigor on the stapes.

So probable do I esteem this that, should the tinnitus and vertigo become as bad as ever, I would advise another opening of the membrana and an inspection of the region of the stapes. If synechial bands should be found in this territory, I would advise their careful exsection.[1]

Case XVI.—William H., fifty-six years old, personally known to me for over ten years, was struck

[1] Since writing the foregoing the patient has informed me, March 10, 1894, that the tinnitus is decidedly less, his ear is more comfortable in every way, and the dizziness far less marked than before the operation.

by a locomotive in December, 1892, and thrown up into the air, landing on his vertex. This happened at a station near Wilmington, Del., and he was conveyed to a hospital in that city. He was admitted as suffering from a compound depressed fracture of the skull. He was unconscious and delirious for two weeks, his life being despaired of.

Immediately upon his discharge from the hospital, January 16, 1893, he perceived deafness and tinnitus in the previously good right ear. He also suffered greatly from confusion in the head, dizziness, and uncertainty of gait. I examined him shortly after the accident, and found the membrana tympani normal in appearance; there was total deafness; and the tuning-fork on the vertex was not heard. The treatment consisted of inflation of the tympana and a spray of Dobell's solution to the nares at intervals for a few months, but without relief. In fact, the noises in the ear and the confusion in the head, with the attacks of vertigo, were by the autumn of 1893 (nearly a year after the accident) beginning to interfere with the patient's ability to attend to business, though his general health and strength had partly improved. The tinnitus in this case was relievable by Siegle's speculum. I advised removal of the incus, which was done under ether on November 23, 1893. The bonelet was not adherent. November 24th, there was hardly any tinnitus, no vertigo, and a great sense of relief in his head. On November 27th, the patient's head was free from confusion and dizziness for the first time after his accident. A small patch of dried blood was present over the seat of the operation in the posterior quadrant of the membrana.

On November 29th, there had been no dizziness since the operation. On December 2d, it was noted that there was a little tinnitus and dizziness on the previous day, but none on this day. He seemed to be able to hear my voice in ordinary tones at six inches.

This patient has continued to feel the relief from tinnitus and dizziness to the present time—March 1, 1894—notwithstanding an attack of influenza in January last. He says his memory and intellect have been much better since the operation. The tuning-fork is now heard *per ossa* in the ear operated on, and his quantitative hearing has certainly increased. He hears quite low tones through the otophone—inaudible before the operation. The operation was, however, not undertaken to improve the hearing, but to relieve the patient from tinnitus and tympanic vertigo, which has been accomplished.

I have operated eighteen times for the relief of *tympanic vertigo* within the past six years. *Seven* of these operations were total excision of the membrana tympani and the malleus, followed by relief in all the cases excepting one—an instance of so-called "traumatic" otitis media. *Eleven* cases were operated upon by removal of the incus, the membrana and malleus being left *in situ;* in one of these the entire stapes was removed, and in another the crura of the stapes in addition to the incus. Of the eleven, nine cases were relieved at once and have remained free; one case slowly improved, and one case, in a neuropathic subject, has experienced little or no relief as yet.[1] Two of the eleven were cases of "traumatic" catarrh, viz., Nos. XV and XVI (in this article), of the series of eighteen cases of tympanic vertigo upon which I have operated.

All of these operations for the relief of aural vertigo were performed upon the etherized subject, the ear being illuminated by a six-volt electric lamp held on the operator's forehead. Removal of the incus is preferable to total excision of the membrana tympani and the malleus in these cases, as the latter operation is invariably followed by more or less reaction, while simple myringotomy and removal of the incus is entirely free from this complication.

CLINICAL LECTURE.

CYST OF THE BROAD LIGAMENT FROM A PATIENT SIXTY YEARS OLD—CARCINOMA OF THE BODY OF THE UTERUS—UTERINE FIBROID.

A Clinical Lecture delivered at the Buffalo General Hospital, Gynecologic Clinic.

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CYST OF THE BROAD LIGAMENT IN AN OLD WOMAN.

The specimen I show you is the result of an operation in a decidedly interesting case. The patient was a little more than sixty years old, and she gave the history of having had an abdominal tumor for forty years. Upon examination I found a great distention of the abdomen, and, as the walls were thin, fluctuation was very evident. The fluid was plainly encysted and not free in the peritoneal cavity, as there was dulness anteriorly and resonance in the flanks. I made the diagnosis of parovarian cyst, or a cyst of the broad ligament, for three reasons—(1) the length of time which the tumor had lasted without causing serious symptoms; (2) the sensation communicated to the hand of a thin-walled, unilocular cyst, without the hard distention which an ovarian tumor causes; (3) the history of repeated tappings without evil result, on account of the bland character of the fluid, which was described as being like spring-water.

Since the tumor was first noticed the patient had borne six children, and she had been tapped twenty or thirty times. During each pregnancy the size of the uterus and of the tumor taken together was so great as to interfere with respiration, and tapping became necessary. The tumor would remain collapsed while she was nursing the child, but as soon as the child was weaned it would begin to refill, necessitating tapping, sometimes before she was again pregnant, sometimes not till she

[1] Since the foregoing was written Case XVII has reported great relief from tinnitus and vertigo.

was carrying the next fetus. After the birth of the last child the cyst did not fill again for ten years. After each tapping it has been impossible to detect any evidence of tumor. These facts I learn from Dr. Gould, of Lockport, who has followed the case through its history. The general health of the patient has been good, and she sought operative relief because tapping had become necessary at intervals of only three weeks, and she was tired of the frequent interference.

I naturally expected to find adhesions where the tumor had been tapped, but none was present, not even at the site of the latest aspiration, three weeks previously, when thirty-nine pounds of fluid had been withdrawn. This is a remarkable fact, and it bears additional testimony to the innocuous and unirritating qualities of the fluid of broad-ligament cysts. It is an impossibility to prevent the entrance of some of the fluid into the peritoneal cavity at each tapping, and it is a well-known fact that such cysts do not produce peritonitis, even if they rupture into the peritoneal cavity, unless there is some accidental element of sepsis or irritation.

After emptying the tumor and pulling the flaccid sac out, I found that it had a very broad pedicle, and that it had grown between the folds of the mesentery of the large intestine, so that the bowel was apparently adherent to it. By cutting through the peritoneal coat of the tumor, I was able to enucleate it from its seat in the mesentery. It would have been possible to enucleate the whole cyst, leaving no pedicle at all, but there would have remained a large oozing surface, and I preferred to tie off a considerable part of the tumor. After trimming the cyst away from its adhesions down to the intestine, I puckered together the raw surfaces with catgut, and brought the peritoneum together over them, so as to leave only a line of cut tissue. The ovaries were atrophied. One lay on the tumor and was removed. The other I lifted up and examined, but as there was no disease it was left in place. The uterus was somewhat large.

The patient has had practically no elevation of temperature or acceleration of pulse, and her recovery is assured.

You will notice the thin wall of the cyst, the clear fluid, which is so different from the turbid contents of an ovarian tumor. Here is a little cyst filled with even lighter-colored fluid than the larger one, but there is not the multilocular condition seen in ovarian tumors. I can demonstrate to you on this specimen another characteristic of intra-ligamentary cysts: the peritoneum separates with the greatest ease from the tumor, whereas in ovarian cysts, there being no peritoneal covering, we cannot make such a separation.

CARCINOMA OF THE BODY OF THE UTERUS.

This specimen is probably one of carcinoma of the body of the uterus. The patient from whom it was taken was a woman of fifty-eight, who, for a year or two, had had a discharge from the uterus, accompanied by so much pain that one-grain doses of morphin hypodermatically were necessary to give relief. I had treated her for a year, curetting the uterus, once or twice inserting tampons of iodoform-gauze, and using other local measures without affording relief. Although the duration of the disease made me doubt the existence of carcinoma, I finally decided to remove the uterus, as the patient was losing ground continually, and was praying for anything, even death, that would stop her sufferings.

The operation was rendered difficult by the small size of the vagina, which would not hold a Simon's speculum. The patient had never borne children, and the vagina was already undergoing the atrophy of age. I first made an opening into the utero-vesical pouch through the vagina, and continued the incision entirely around the uterus, so as to free the cervix from its vaginal connections. Then the abdomen was opened, the patient occupying the Trendelenburg position, the advantages of which were never more clearly exemplified. The intestines were all retracted toward the diaphragm, and the pelvis was exposed and found empty. The broad ligaments were ligated and cut away. The ligatures, which were of catgut, were brought down through the vaginal wound, which was left open, the vagina being stuffed with iodiform-gauze, which has not yet been changed. The uterus, as you see, is not very large, and its removal was easy. There was no oozing at the completion of the operation. The patient nearly died of shock on the table, but she rallied, and last night was in fair condition. Whether she recovers or not, and whether the condition proves to be carcinoma or not, I shall still consider that the operation was justifiable.

On pressure, what appears to be pus exudes from many spots in the muscular wall, and there is no distinct tumor. If this is not carcinoma, it must be a diffuse suppuration of the uterus—something which certainly would demand radical treatment. But on examining this substance under the microscope, it is seen to consist of epithelial cells, which perhaps have been squeezed out of carcinoma-nests. (P. S.—The patient recovered.)

FIBROMA OF THE UTERUS.

This patient is forty years old, has been married five years and a half, has never had children, and was perfectly well until six months ago. She then began to have pains across the abdomen, and her menstruation, which had previously lasted three days, was prolonged to five or six days, with a corresponding increase in the loss of blood and with much pain. She complains of having to pass water every fifteen minutes during the day, and very frequently at night, so that her rest is broken. Except for the calls to urinate she says she would sleep well. The urine is clear and light-colored, almost like water, and she does not pass much at a time. Her digestion seems to her sluggish, she feels as if the food remained in the stomach, and there is a tendency to constipation.

As is usually the case, there is nothing distinctive in this history, and an examination will be necessary to reach a diagnosis. I find the cervix in about the normal position, but in following up the uterus it seems to spread out in front, behind, and on both sides. By bimanual palpation it is easy to determine that the uterus is enlarged, and, from the presence of this firm mass, and the history of increased and painful menstruation, I have no hesitation in making the diagnosis of a fibroid tumor, perhaps as large as my two fists. The tumor is hard, smooth, painless on pressure, with a few secondary

nodules—all these items being diagnostic of a fibroid. As to its location, it is not subperitoneal, as the uterus is quite symmetrically enlarged; there is not sufficient menorrhagia to determine that it is submucous, and it is probably therefore interstitial. The passage of a sound would aid somewhat in the diagnosis, but there is no especial advantage in determining the exact location.

We might remove the tumor, tying off the broad ligaments, drawing the uterus into the abdominal wound, and holding it there with a clamp. But, as it is still quite small, the case is favorable for the trial of galvanism. We may diminish the flowing and ameliorate the other symptoms, even if the tumor does not decrease to any extent.

The bladder-symptoms deserve special attention. It is generally supposed that a large tumor pressing on the bladder will cause irritability and a frequent desire to void urine, but it is by no means necessarily the case. The patients from whom I removed a large fibroid of the uterus and an ovarian cyst respectively, and whom you saw at a recent clinic, presented no such symptoms. I have seen the pelvis so completely filled by tumors that there was apparently no room left for the bladder, and yet there were no particular bladder-symptoms. The urine should always be examined in these cases of vesical irritability, for there is usually found an excessively acid reaction, or oxalate of lime crystals, or some other irritating substance. Even when a tumor is present, it is not safe to take it for granted that all the symptoms are due to it alone. Such irritability of the bladder as this patient has is more than an uncomfortable symptom. It interferes with her work, it interrupts her sleep—which is still more important—and it depresses her general health appreciably. Electricity will tend to relieve the local irritability; if the urinary symptoms are due to anatomic conditions, to the encroachment of the tumor, a diminution in the size of the tumor would also be effectual, and this we hope to accomplish with electricity. Certainly I have seen many similar cases improve symptomatically and in the size of the tumor by the continuous use of galvanism.

Note.—The symptoms were not entirely relieved by galvanism, and oöphorectomy was performed later. Even this did not materially diminish the size of the tumor, and I should recommend extirpation of the uterus.

CLINICAL MEMORANDA.

COMPOUND COMMINUTED FRACTURE OF THE FRONTAL AND ETHMOID BONES, WITH INJURY TO THE MENINGES, AND LACERATION AND PROTRUSION OF THE BRAIN-SUBSTANCE; RECOVERY.

By THOMAS J. McLOUGHLIN, M.D.,
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The following case is thought to be of interest, not only on account of the severity and extent of the fracture of the frontal and ethmoid bones, but also because of its having been complicated with a rupture and tearing of the meninges, and a laceration and protrusion of the substance of the brain; and, lastly, because of the complete recovery from these severe injuries.

C. A., by occupation a dock-builder, was born in Norway, and is at present twenty-four years of age. While going to his work, on July 15, 1893, he received an injury by jumping from a moving railroad train. The cars slowed up, but did not stop as he expected, and he jumped on a pile of cinders, which he hoped would protect him from the bad consequences of his rash act. Impelled by the momentum of the moving train, he pitched forward after jumping, and his forehead struck with great force against a cross-tie. He was picked up unconscious and bleeding, and after a little delay sent to the hospital. On examining him after admission, I found all the soft tissues torn from the frontal bone from the middle of the forehead to the nose, and hanging down over the face, revealing an extensive compound comminuted fracture of the frontal and ethmoid bones. The line of fracture extended from the inferior and outer border of the left frontal eminence, through the nasal eminence and right superciliary ridge to the right external angular process.

By exploration I was enabled to feel the movement and crepitation of the fractured ethmoid, and to ascertain that the fractured edges of the frontal bone, nearly throughout the line of fracture, were separated half an inch, freely admitting the tips of the fingers. Both the tables of the frontal sinus had been extensively comminuted. The meninges were ruptured and torn, the lower frontal convolutions were lacerated, and brain-substance was seen protruding through the opening. The right eye appeared hopelessly crushed, and from the large size of the chasm all hope of recovery seemed precluded. I removed many small pieces of bone, partly the tables of the frontal sinus, and the whole of the orbital plate of the frontal, which was broken into several fragments and detached. All loosened pieces of bone having been removed, the wound well cleansed of dirt and cinders and thoroughly syringed with bichlorid solution, I put in a strand of catgut for drainage, brought the reflected flaps of soft tissue back to their natural position, as exactly as I could, and united them with carbolized silk sutures. The wound was then dusted with iodoform and dressed with iodoform and carbolic gauze, and bandaged.

Notwithstanding his severe injuries the man was conscious when taken to the hospital, and gave rational answers to the questions asked him; his pulse was good, his respiration undisturbed, his left pupil contracted, the right eye being too much injured to note the state of the pupil.

On the evening of the 15th there was some acceleration of the pulse; complaint of headache; slight delirium; but the man had rested quietly during the night. The temperature was 99°, the pulse 85.

On July 16th, the temperature ranged from 99° to 100½°, the pulse from 76 to 82. The dressings, having become soiled during the night with blood and free serous discharge, had to be changed. The bowels were evacuated during the day. The pupil was contracted, headache was constant, and delirium occurred in the evening, followed by an uneasy rest. His hair was cut short, and an ice-water cap was applied to his head.

On July 17th, the temperature ranged from 99½° to 101°, the pulse from 80 to 88. The patient was delirious and restless all day; the pupil was contracted, and headache was severe and continuous. It was again found necessary to change the dressings. The patient partook freely of liquid nourishment.

On July 18th, the man was drowsy and listless, some paralysis of right arm and leg had set in, and his headache and delirium still persisted actively.

On July 19th, the hemiplegia of the right side was more marked, and the patient used chiefly the left extremities in his movements. The pupil was now dilated, and delirium was unremitting. The discharge from the wound was free and the dressings required to be changed daily.

From July 20th to the 23d the temperature ranged from 100° to 102.5°, and the pulse from 64 to 72. During these four days the patient was in a comatose state, with complete paralysis of sensation and motion of the right side; he lay on his back and right side, the pupil dilated, delirious the greater part of the time, and endeavoring to pull the dressings off his head. All evacuations were passed in bed. The wound discharged freely and the dressings were renewed each day.

On July 24th and 25th, the delirium was less severe and constant; there was some return of sensation, but no improvement of motion was yet appreciable. The wound was doing well.

On July 26th, the temperature was 99¾°, and the pulse 70. Sensation was much improved, and there were evidences of returning motor power; there was no delirium during the day, and the man could be aroused to consciousness, making brief answers to questions.

The next day there was a full return of consciousness and recognition of friends and attendants; the power of sensation and motion was rapidly returning. The wound discharged less, was granulating well, and did not require a daily change of dressing.

On July 28th, the man's condition was still further improving, although he was not much inclined to talk, but did so rationally when spoken to. He had so far recovered from his hemiplegia that he was able to get out of bed and walk to the night-chair close by.

On July 29th, the temperature was 98½°, and the pulse 74. The man was more attentive to his surroundings, giving correct answers freely to questions addressed to him, but his speech and reasoning faculty were not always coherent; he was able to sit up and walk about the room, and his appetite and digestion were remarkably good. The wound was doing well, discharging almost nothing; the bony interruption was rapidly filling up with callus, and cicatrization was progressing favorably.

On the night of July 29th he again gave evidence of deranged intellection by putting on his clothes in the middle of the night and starting down stairs, but the following day his mental faculties were clear. The swelling and inflammation of the right eye, which I feared was so badly crushed that total loss of sight would follow, had greatly subsided, and vision was so much improved that he could discern and count fingers held before the eye.

On July 31st, the wound was healed and the bandages were removed; the chasm in the forehead was filled out firm with ossifying callus, and almost on a level with the rest of the bone. The man sat up all day, had a good appetite and digestion, and declared that he felt well bodily. Notwithstanding his great physical improvement he still at times showed traces of intellectual derangement, manifested chiefly by the performance of irrational actions. During the next four days his sight steadily improved, and he could read large print with the injured eye. Frequent headaches of a severe character across the forehead still distressed him, and he stated that his right side continued to be a little weaker than his left, and that a slight numbness of feeling persisted as well in his face as in his right arm and leg. His mental faculties seemed restored to their normal condition, and his speech and actions were entirely rational.

On August 20th, five weeks from the date of his injury, he was discharged, cured.

On examining the patient on November 8th, nearly four months after the injury, I found a noticeable change in the contour of his forehead; it had lost its regularity of outline. The superciliary ridge was effaced, and at the site of the nasal eminence, in place of the former elevation a marked depression existed. Immediately above the frontal sinus the bone appeared more prominent, and seemed bulged out, but I think the prominence was only relative, and that the appearance was caused by the absence of the sinus of the forehead and by the depression that replaced it. On close inspection and measurement it was found that the right eyebrow was on a plane one-half inch posterior to that of the left brow, the whole right side of the forehead having been driven back by the force of the blow. The sight of the right eye he declared to be good, and from his friends I learned that they perceived no difference either in his mental operations or in his disposition from what these were before his injury.

A CASE OF COLCHICUM-POISONING.

By HAROLD N. MOYER, M.D.,
of Chicago;
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Between four and five o'clock on September 10, 1893, a physician administered an unknown quantity of colchicum to a young woman, twenty-two years of age. The woman was apparently in good health, with the exception of chronic constipation, and colchicum was administered for its cathartic effect. The quantity given was claimed by the physician to have been about a teaspoonful, but he admitted pouring it from a bottle directly into a glass, to which a small quantity of water was added, then giving it to the patient. There is thus some uncertainty as to the quantity that was actually taken. There is also some uncertainty as to the preparation. It was stated, however, to have been the wine of colchicum, but it had remained in the physician's office for many months very insecurely corked, and it is possible that the preparation had become very much stronger from the evaporation of the menstruum. From the physician's office the patient hurried to her home, and reached there about five o'clock, somewhat overheated, from having walked rapidly. Immediately on her arrival home she took a cold bath, and changed her clothing. At about seven o'clock she had a severe chill, followed by vomiting and frequent movements of the bowels, with very severe colicky pains in the abdomen. This

condition continued until 10.30 P.M., the woman being alone in the house. At that time a physician was called, who administered sedative remedies, the exact nature of which is not known. Very early the following morning the pain subsided, the vomiting ceased, and she became quite comfortable. Her condition continued substantially the same until about twelve o'clock of the following day, when the pulse and respiration began to fail. The physician was again summoned, and administered stimulants. Her condition then remained about the same until twelve o'clock the following night, when another sinking spell came on. Notwithstanding that stimulants were freely administered at this time, the respiration and the pulse continued to fail, and death took place at four o'clock on Wednesday morning, thirty-six hours after the administration of the colchicum.

A post-mortem examination was made September 13th, at 2 P.M., twenty hours after death. The body was that of a fairly well-nourished girl, of medium size, in good flesh, and well developed. Rigor mortis was disappearing. The scalp was removed, and was comparatively bloodless, otherwise normal. The skull-cap was slightly adherent; the dura normal. The superior longitudinal sinus contained a long, slender, goose-fat clot; the pia was normal, thin, and with difficulty separated from the convolutions. There was a minute whitish clot in the basilar artery, which was loose, soft, and did not occlude the lumen of the tube. A similar minute clot was found in the anterior communicating artery. The ventricles were quite empty; the brain, as a whole, contained only about the usual supply of blood; the choroid plexuses were more prominent than usual. On the floor of the fourth ventricle, just above and anterior to the striæ albicantes, a minute hemorrhagic spot was found, not larger than the head of a pin. A vein was dilated so as to be readily distinguished a little in front of this and on either side of the median rhaphé. The remainder of the brain was entirely normal. The right heart was moderately distended with clotted blood, the left contracted and empty; a goose-fat clot was found in the right ventricle, extending into the pulmonary artery. The valves and the muscular structure of the heart were intact. The coronary arteries were dissected and found normal, and contained no clot. The right border and the apex of the heart contained a number of hemorrhagic markings; there were slight effusions of blood between the muscle-bundles, which resembled somewhat the appearance produced by dipping a comb into a colored fluid and marking a sheet of paper. These were some thirty or forty in number, and when cut across some fluid blood could be pressed out of the spaces. Ten or fifteen of these small spaces were found at the junction of the left ventricle and auricle, somewhat larger than those described, and round rather than oblong. The left pleural cavity was normal, with the exception of two bands of adhesions. The lungs were hypostatically congested, but floated well upon the surface of water. Very little edema was present, though they seemed to contain more than the usual quantity of blood in the vessels. The right pleural cavity was almost obliterated; the lung was removed with difficulty. The right lung was in substantially the same condition as the left. The bronchi of both lungs contained a small quantity of frothy, bloody mucus; the trachea contained a small quantity of bloody mucus; the thyroid gland was enlarged, each lobe measuring two and one-half by one and one-half inches. The esophagus was normal. The abdominal cavity was opened, and the stomach found enlarged, about ten by five inches, and distended with gas.

The general appearances of the intestines were normal, upon first opening the abdomen. About six ounces of bloody serum were found in the abdominal cavity. The spleen was small and pale. The pyramidal portion of the left kidney was congested, the cortex normal, and the capsule readily stripped. The right kidney was in precisely the same condition, with the exception that the pyramids were still more congested. The colon was quite empty, containing only a white, cheesy-like mass, spread out evenly over the mucous surface. There was no ulceration or disease of the mucosa of the intestines. The small intestines were normal throughout. The stomach seemed a little more deeply red than usual on its posterior surface. It contained nearly a pint of liquid; the mucous membrane was grayish in color, and separated readily from the submucous structures. The liver was unusually pale and glistening, and the proper markings of the organ could not be distinguished. The bladder was empty and contracted, containing a small quantity of mucus. The rectum was empty and very pale; the vagina was dark in color, with its rugæ well marked, and it contained some fluid blood. The body of the uterus was not enlarged. The mucosa was soft, velvety, and a little congested. The spinal cord was not examined. An examination of the contents of the stomach gave no reaction for colchicin. The liver was not examined for that poison.

While there is uncertainty as to the quantity of colchicum taken in this case, the clinical symptoms are quite in accord with those detailed in the few cases that have thus far been published. A very complete post-mortem examination also failed to reveal any adequate cause of death. Therefore, while the colchicin was not separated and identified in the abdominal organs, I think the cause of death was fairly well established. In this connection we would call attention to the hemorrhagic markings found upon the heart, which have been described before in cases of death from colchicum-poisoning.

EPITHELIOMA OF THE SOFT PALATE.[1]

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ON May 16, 1893, Mr. P. C., sixty-five years old, presented himself at the Nose and Throat Clinic of the Polyclinic Hospital, giving a history of having had, early in the winter, an attack of influenza, accompanied by severe cough. The violence of the cough, he thought, had caused the hoarseness and slight soreness then present. The cough and hoarseness soon disappeared, but the soreness still persists, and lately he has felt a lump in his throat. At no time has there been acute pain either on swallowing or talking.

[1] Exhibited before the Laryngological Section of the College of Physicians, March 6, 1894.

As to the family history, we learn that the patient's father died of "cancer" at the age of fifty, his mother of a "stroke," at seventy-three. Four brothers and one sister are deceased, none from malignant disease.

Examination disclosed a large irregular mass, involving the entire uvula, extending upward on the soft palate, and on either side well across the half arches. The margins seemed elevated and well-defined. The entire growth seemed quite dense to the touch, but was covered with superficial ulceration.

A diagnosis of probable epithelioma was at once made, which was verified by the removal of a small portion of the tip of the uvula and its microscopic examination. As immediate excision seemed to offer the best chance to the patient, it was advised and accepted.

Through the kindness of Dr. MacCoy, I was enabled to operate in the hospital on June 6th, Dr. Cleemann, the patient's family physician, being present. In order to avoid hemorrhage, and as the growth was so clearly defined, I decided to remove it under cocain, and with the galvano-cautery knife. The pain from the cautery being so easily borne, the cocain was soon discontinued.

As it was almost impossible to keep the cautery-knives continuously hot, the operation was rather tedious, and recourse was finally had to the smallest point of the Paquelin cautery, with success. At no time was there any hemorrhage until I divided a few remaining fibers with a scalpel; then it was but slight. The patient made an uninterrupted recovery, was allowed to leave the hospital on June 8th, and within two weeks the wound had entirely healed. Since then there has been no indication of recurrence.

Being fully aware that considerable of the soft palate would have to be sacrificed, making practically an artificial cleft palate, I was careful to tell the patient that there would probably be a decided change in his speech. To my surprise, we were unable, after the operation, to detect any change whatsoever.

Malignant growths of the soft palate are not very frequently encountered, but in the comparatively few cases on record a considerable variety in structure has been observed.

Carcinomata, scirrhous, medullary, and encysted, as well as epitheliomata, have all been reported. It is interesting to note in how few of these pain was a prominent symptom.

Mr. R. Perssé White (in the *Irish Hospital Gazette* for 1873, p. 181) describes a case which was curiously like mine, in that a growth of almost exactly similar size and position was removed by means of the galvano-cautery. It is the only instance reported in which that instrument was used.

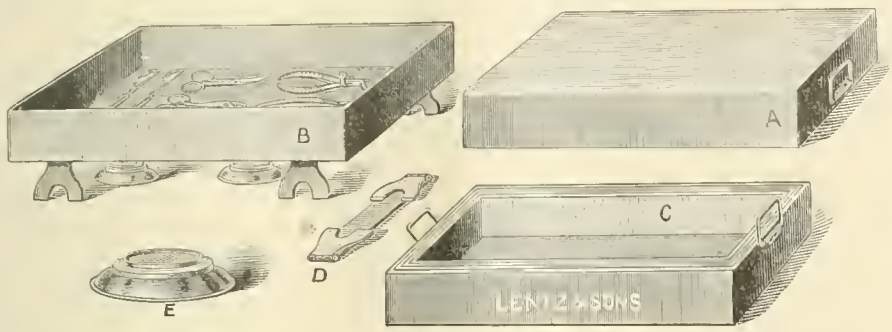
1804 Chestnut Street.

NEW DEVICE.

A PORTABLE TRAY INSTRUMENT-STERILIZER.

By ANDREW J. DOWNES, M.D.,
of Philadelphia.

Nearly two years ago I devised the simple sterilizer here illustrated. It consists of a nest of trays (C, illustration), the largest tray being 13¼ inches long, 6⅛ inches wide, and 1½ inches deep. The next size is just sufficiently less in all measurements to fit inside of and telescope freely but closely with the larger. These two trays, with a pair of simple trestles, as shown in the cut, and two asbestos alcohol lamps, form a complete sterilizer for instruments and trays. The third and fourth trays form a second sterilizer; the nest thus supplying one or two sterilizers, as occasion requires, and always four trays. In use the smaller one of a pair of



trays (B), holding the instruments, silkworm-gut, silk, etc., immersed in water containing 1 per cent. of soda, rests on the trestles; the cover tray, A, is placed over this, and the lamps lighted. Experiments prove that in six minutes a temperature of 212° F. can be obtained in any part of the sterilizing chamber. When ready to work, the surgeon removes the cover and assorts the instruments in both trays, which are also sterile.

The trays are made of sheet-brass, nickelled on both sides. The sizes are arbitrary; those described fit snugly in the bottom of a cabin-bag, 14 inches long, the inner tray of the nest holding conveniently instruments, trestles, and lamps.

For the usual run of gynecologic work this size is sufficiently large. For obstetric operative work and major surgery requiring large and numerous instruments a pair of trays to fit in an 18-inch cabin-bag will meet all requirements. This set should be 17 inches long and 2 inches deep.

A few small shallow trays, ¼ inch deep, will be found useful. They occupy little space and are sterilized with the instruments.

The sterilizer is made by Charles Lentz & Sons, of Philadelphia.

MEDICAL PROGRESS.

Celiotomy for Intestinal Obstruction by a Biliary Calculus.—Gusenthal (*Wiener medizin. Presse*, 1894, No. 12, p. 441) has reported the case of a woman, seventy years old, who for a period of twelve years had suffered with recurrent attacks of intense abdominal pain, without the association of jaundice. The patient came under observation in one of these attacks, not having had a movement of the bowels or having passed flatus for three days, and vomiting. The general condition was bad, the pulse was feeble, and the vomiting became stercoraceous. The abdomen was not distended and not painful. The bladder was empty, and nothing abnormal could be detected by rectal or vaginal examination. High irrigation of the bowel brought away fecal matter and permitted the escape of gas. On the following day the general condition appeared better, but the fecal vomiting continued. Irrigation of the stomach brought away feculent fluid, but a high irrigation of the bowel was without effect. Operation was now determined upon, and the abdominal cavity was opened by an incision extending from the umbilicus to the symphysis pubis. The intestine below a certain point in the duodenum was collapsed, while the small portion above was distended. At this point a hard ovoid mass as large as a walnut was palpable, and to which the intestine was closely applied. The bowel was grasped on either side of this body, which proved to be a biliary calculus and was removed through an incision an inch and a half long. The wall of the intestine presented a normal appearance, and the opening was at once closed by suture. The abdominal wound was closed and dressed antiseptically. Recovery followed without complication, and the patient was dismissed, wearing an abdominal bandage, four weeks after the operation. Six and a half weeks later the woman again came under observation, presenting symptoms similar to those of the preceding attack, but death took place after the lapse of eighteen days. Upon post-mortem examination, multiple encapsulated abscesses were found in the course of the lower portion of the abdominal cicatrix, and containing remains of silk sutures. The omentum was attached to the abdominal wall in the line of the cicatrix. The first and second loops of the jejunum formed an angle and were bound by adhesions, in the midst of which was an abscess communicating by a small opening with the lumen of the bowel. The inner surface of the bowel presented a small, smooth, linear cicatrix. The liver was enlarged and contained numerous umbilicated, carcinomatous nodules. The gall-bladder was contracted and contained a small, pyramidal stone of about the size of a cherry. On the inferior surface of the viscus was a fistula communicating with the adjacent adherent duodenum. The common choledoch and cystic ducts were patulous. The head of the pancreas was the seat of a large carcinomatous formation.

Cerebellar Tumor.—Jalland (*Lancet*, No. 3681, p. 671) has reported the case of a woman who presented progressive weakness, together with pain in the right arm and leg and between the shoulders. The voice had gradually become husky. Vision had gradually failed until there was absolute blindness, with utter inability to distinguish light from darkness. The pupils were rather large, but there was no contraction on exposure to light. The grasp was enfeebled in both hands, the more so in the right. The neck was stiff, and on being bent forward great pain was induced in the cervical portion of the spine. The plantar reflexes were pronounced, but the knee-jerks were absent and there was no ankle-clonus. Sensibility was preserved in the legs. Both optic discs were pale and yellowish; the vessels were distinct; and the margins of the discs faded imperceptibly into a pale retina. There was neither ptosis nor paralysis of the recti muscles. There was deafness of the right ear, while the hearing of the left ear was preserved. The act of winking was but seldom performed, and then but partially. There was lessened power in the right orbicularis palpebræ in ordinary movements, though the eyelids closed tightly when the will was exerted. While under observation headache set in, burning pain through the head and down the neck being complained of. The head was held low in bed, and the neck and spine stiff, attempts at movement inducing pain. The right conjunctiva became anesthetic, though the left maintained its sensibility. Difficulty in localization with the right arm and forearm developed, but the left side remained unaffected. Smell and taste appeared to be preserved. Drowsiness and mental apathy came on, although knife-like pains in the back and legs were complained of. Vomiting appeared late, together with twitching of the eyes and stiffening of the arms. Breathing appeared to cease three or four minutes before the heart stopped beating. Upon post-mortem examination, a tumor about the size of a walnut was found situated upon the antero-inferior aspect of the cerebellum, projecting slightly above the surface. The growth was moderately firm in consistence, irregularly oval in form, and more deeply gray in color than the general substance of the cerebellum. It was distinctly localized, but not encapsulated. It occupied a position corresponding to the anterior portion of the right digastric lobe of the cerebellum. It pressed on the right side of the medulla, which displayed a slight depression. The right optic tract was somewhat flattened and only two-thirds the thickness of the left. The posterior aspect of the internal surface of the petrous portion of the temporal bone was hollowed out from the pressure of the growth. On section the tumor showed slight hemorrhages in its interior. Histologic examination disclosed the structure of a glio-sarcoma. The right optic tract was atrophic.

The Relation of Heart-disease to Menstruation.—At a recent meeting of the Obstetrical Society of London, Gow (*British Medical Journal*, No. 1733, p. 579) detailed the results of a study of the menstrual function in fifty cases of heart-disease in women. In twenty-eight the menstrual flow was unaltered; in seventeen it was absent or scantier than before; in five it was either more profuse or recurred more frequently than before. In no case was there good evidence that heart-disease gave rise to severe menorrhagia. Amenorrhea or scanty menstruation appeared to be a more common accompaniment than menorrhagia. A further analysis of these cases seemed to point to the fact that heart-disease led to relative sterility, and also that it increased the tendency to premature expulsion of the ovum. It was pointed out

that a large number of women suffering from valvular disease of the heart passed safely through the period of pregnancy and labor. Of mitral stenosis there were twenty-two cases; in nine menstruation was regular, and the amount of blood lost unaltered; in five cases menstruation was regular, but more scanty; in four there was amenorrhea; in four menstruation was either more frequent or more profuse. There were fifteen cases of mitral incompetence; in ten menstruation was unaltered, in four more scanty; in one there was amenorrhea. Mitral stenosis and incompetence were present in seven cases; in four menstruation was unaltered, in one more scanty; in one there was amenorrhea, and in one the menstrual loss was slightly increased. There were two cases of aortic incompetence and obstruction; in both menstruation was unaltered. In three cases there was aortic and mitral incompetence; in these menstruation was unaltered. One case presented aortic incompetence and obstruction and mitral incompetence; in this the menstrual loss was scantier than before.

Accentuation of the Pulmonary Second Sound in Typhlitis.—In studying the records of a number of cases of perityphlitis, Mannaberg (*Centralblatt f. klin. Medicin*, 1894, No. 10, 209) was struck by the frequency with which accentuation of the pulmonary second sound was noted—ten times among eighty-eight cases. In a subsequent study, devoted to the determination of this point, among thirteen cases of ordinary acute perityphlitis, the pulmonary second was found loudly accentuated in four, and more distinct than the aortic second sound in seven others; while in the remaining two both the pulmonary and the aortic second sound were accentuated, in one with duplication of the pulmonary sound. In one other case there was duplication of the pulmonary sound; in two there was functional systolic blowing, and in one of these transitory arhythmia of the pulse. The conclusion is thus reached that accentuation of the pulmonary second sound is a frequent manifestation in the course of perityphlitis, but an explanation for the phenomenon is as yet wanting.

THERAPEUTIC NOTES.

The Treatment of Typhoid Fever with Lactophenin.—v. Jaksch (*Centralblatt f. klinische Medicin*, 1894, No. 11, p. 233) reports the employment of lactophenin in eighteen cases of typhoid fever with most gratifying results. Lactophenin is chemically a phenetidin in which the acetic acid yet in combination with the ammonia-remnant is replaced by lactic acid. It is thus lactylphenetidin, and appears as a crystalline powder of slightly bitter—not disagreeable—taste, and is soluble in water. The remedy was given in doses of from 7.5 to 15 grains, enclosed in capsules of starch, the frequency being determined by the degree of pyrexia and other conditions. The cases thus treated were not selected, and were of at least average severity. In no case was any notable unpleasant effect observed. The drug was administered in thirty-three other cases of various febrile kind, making a total of more than a thousand individual doses, and with the same freedom from complication. In one case an initial dose of 7.5 grains was followed by nausea and vomiting, but subsequent doses occasioned no untoward manifestation. In two cases there was slight arhythmia of the pulse, but this could not, however, with certainty be attributed to the medication. The decline of temperature that follows administration of lactophenin takes place gradually and lasts for a considerable length of time, and the subsequent rise, even if it occur rapidly, is not attended with a chill. The quality for which lactophenin is most warmly praised is its sedative action. It dissipates delirium, clears the sensorium, and induces a sense of well-being such as has not been observed in the course of other modes of treatment. The appetite also soon returns. Complications, such as hemorrhage and relapses, are not prevented by lactophenin.

The Treatment of Asphyxia Neonatorum.—Prochownik (*Centralblatt f. Gynäkologie*, 1894, No. 10, p. 225) points out that under certain conditions (such as a low room, bony fracture, objection of the family) the swinging method of Schultze for the resuscitation of asphyxiated newborn children may be impracticable. The requirements to be met are to clear the air-passages, to force air into the lungs, and to stimulate the circulation, in order that oxygenated blood may reach the medulla. To bring about these ends the child is inverted and held by the feet, either by the accoucheur or by an assistant. To prevent slipping, the feet may be covered with soft linen or other material of like nature. The head of the child is gently rested upon some firm surface, in such a way, however, that the neck remains extended. The chest of the infant is now grasped with one or both hands of the accoucheur, and moderate pressure exercised, which, upon the first two or three attempts, is maintained for a short time, and then gradually released; after a certain amount of mucus has escaped from the mouth, the thorax may be given free play following each compressive effort. In successful cases respiration will have been instituted after eight or ten compressions. The child may now be placed in a warm bath, or warm affusions may be made; then another series of eight or ten compressions is undertaken, and these procedures are continued alternately until the resuscitation of the child is permanently assured.

Guaiacol Topically in Acute Tonsillitis.—Raymond (*Medical Record*, No. 1220, p. 364) reports successful results from topical applications of pure guaiacol in the treatment of acute tonsillitis. The application is somewhat unpleasant and attended with moderate irritation, which is not prevented by the previous application of cocain, but the duration of which is, as a rule, but brief. Relief of pain follows almost immediately, and in cases presenting febrile symptoms a slight decline in temperature may be observed. The applications were made with a cotton swab dipped in pure guaiacol. A 50 per cent. solution in oil of sweet almonds is less efficient. The therapeutic effect appears to be more pronounced in cases of superficial or lacunar tonsillitis than in the phlegmonous variety of inflammation.

An Antiseptic Powder.—

℞.—Hydrargi chlorid. corrosiv. . . gr. $\frac{1}{5}$–$\frac{1}{3}$.
Acid. boric. . . . . ℥j.
Acid. tannic. . . . . gr. x.
Sacchari lactis . . . q. s. ad ℥ij.—M.

The sublimate and sugar of milk are gradually and thoroughly mixed, and the boric and tannic acids gradually added.—Pick, *N. Y. Med. Journ.*

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THE SAFRANIN-REACTION IN SPUTUM AS AN AID TO THE DIFFERENTIAL DIAGNOSIS OF PNEUMONIA FROM BRONCHITIS.

THE affinity of mucin for the anilin dyes, pointed out by FLEMMING, SCHIEFFERDECKER, HOYER, and others, led S. SCHMIDT some time ago to suggest a method of differentiating pneumonic from bronchitic sputum by means of the stain of EHRLICH BIONDI, consisting of a mixture of methylene-green, acid fuchsin, and orange G. According to SCHMIDT, a piece of sputum the size of a pea was shaken in a test-tube with a two and one-half per cent. solution of bichlorid of mercury in alcohol until it was broken up into fine particles; the alcohol was then carefully poured off, and the fixed sputum treated with the diluted triple stain. Sputum which contained large quantities of mucus turned the mixture greenish-blue, while pneumonic sputum changed the color to red, a mixture of the two giving rise to a dirty-violet tint. The reaction has been attributed by RENK, KOSSEL, STARKOW, and others, to the predominance of albumin in pneumonic sputum and of mucus in the sputum of simple bronchitis, and this is probably the correct explanation. The test is a macroscopic one and has been manifoldly confirmed, but it is not always reliable, as the reaction is obscured when there are many cellular elements (leukocytes, epithelium) present.

ZENONI ("Ueber Farbenreaktionen des Sputums," *Centralbl. f. innere Med.*, 1894, No. 12) claims that the method which he suggests does away with this difficulty, and, moreover, is an improvement on the old, as his test adds to the naked-eye appearances the possibility of increased precision by means of microscopic examination.

He spreads out a piece of the sputum to be examined on a cover-glass, leaves it in strong alcohol for a quarter of an hour or more until coagulated, and then stains with a half-saturated aqueous solution of safranin. The cover-glass is examined on a white ground; if mucus (bronchitis) predominates the color will be distinctly yellow, if albumin (pneumonic diseases) is in excess the color will be red. The reaction of safranin with mucus occurs so quickly and sharply that there can be but little doubt that a definite chemic combination takes place.

BIZZOZERO was among the first to observe this peculiar metachromatic action of safranin, when studying the tubular glands of the stomach and intestine. ZENONI has tested the reaction on various mucoid and albuminous substances and finds that among others the mucus of the gastro-intestinal tract and of the vagina, the secretions from nasal polypi, synovia, and cartilage undergoing mucoid metamorphosis, turn yellow with safranin, while blood-serum, fibrin, albumin, and peptone invariably give the red color.

The test, as a means of differentiating sputum as an aid to diagnosis, it seems to us, is well worthy of further trial, and it may be, too, that subsequently wider application of the principle may be found in the differentiation by color-reactions of different substances now grouped together under the generic name of the "nucleo-albumins."

EDITORIAL COMMENTS.

The Medical Profession its own Worst Enemy.—Such is the lesson of every nostrum-advertisement in medical journals, or certified to by medical men, of every attempt to break down the Code, of reading-notices, of our indifference to the patent-medicine humbug, to the charlatans within and without the profession.

But the most amusing proof of the truism comes from Ohio. After a long war, in which "the three schools" had been worsted and jeeringly howled into defeat by the combined forces of the clairvoyants, Indian medicine men, wizard kings of pain, and abortionists, the

medical men arose in their wrath, intimidated candidates, went to the polls *en masse*, and elected a Legislature bound and bonded to enact a medical practice act (in the interests of "the three schools") that should certainly and at last put to utter rout the filthy hordes of the worst sorts of medical harlequins. To the House Committee on Medical Colleges and Universities of the Legislature, a committee made up almost entirely of physicians, was consigned the bill.

And there it died! The committee proposed to report the bill back without recommendation, but this was equivalent to complete defeat, and the responsibility was left where, as Dr. Richardson says, it properly belonged, with the committee itself.

This bit of opera bouffeism is so astonishing that Dr. Richardson's explanation must be quoted in order to render our report believable:

"The division in the committee is entirely on the organization of the board. Under the present arrangement the regulars would have three members out of seven, with five affirmative votes necessary to effect any action by the board. The disaffected members of the committee desired a board of eight, four of whom may be regulars, with an affirmative vote of six necessary to pass any measure. There is no more difference in the practical effects of the two boards so constituted than there is between tweedle-dum and tweedle-dee, and the members of your committee on legislation here have been quite willing to agree to either, but the chairman of the committee in the House is a homeopath, and his school seems to suspect some treachery and something inimical to their interests, and will not consent to the change."

After this, dare anyone say a word as to any deficiency among medical men in a sense of humor, or hint that we need a Jonathan Swift as our historian?

Insular Understandings.—Our English friend, the *Medical Press and Circular*, views as "curiously novel" the suggestion of erecting in New York a large building for the sole purpose of providing consulting-rooms for physicians (with the added comment that "we never seem to hear of 'surgeons' in America"). Our worthy contemporary seems not to be aware that just such buildings as that contemplated for New York are already in most successful operation in Chicago and Pittsburg, and perhaps elsewhere, and that a proposition has been made for the erection of a similar structure in Philadelphia. Our contemporary may not have heard of the American surgeon as constituting a distinct class, but medical literature, past and present, will bear abundant evidence of the ability of the surgeons of America and of the character of their work. The American surgeon is first of all a medical man, and only a surgeon by specialization.

In passing we may call the attention of our friend, who so strenuously objects to the omission of the unnecessary part of the diphthong in such words as "hæmorrhage" and "perinæum" and the like, that in the *Press and Circular* of March 21st, in a prescription written in Latin, the word "ætheris" appears. Even the American orthographomaniac dare not take such liberties with the dead languages.

The Conduct of the Journal of the American Medical Association.—We are glad to learn that at a largely-attended meeting of the Philadelphia County Medical Society, held April 18th, the following preamble and resolutions were unanimously adopted:

Whereas, The Code of Ethics of the American Medical Association declares it derogatory to professional character for a physician to dispense or in any way promote the use of a secret nostrum; and the American Medical Association by a resolution unanimously adopted at its meeting in 1892 forbade the advertising of such nostrums in its *Journal*;

And whereas, The *Journal* of the Association has continued to advertise such nostrums, and in defence of its course in this particular has published an anonymous personal attack on a member of the American Medical Association and of this Society:

Resolved, That the Philadelphia County Medical Society respectfully demands that the Trustees of the *Journal of the American Medical Association* shall, in their public official acts, respect the spirit and letter of its Code of Ethics; and that the columns of its *Journal* shall not be used for the anonymous personal abuse of its members in good standing.

Resolved, That a copy of these resolutions be transmitted to the Medical Society of the State of Pennsylvania, and to the American Medical Association, and to the weekly medical journals.

Resignation of Dr. Pepper of the office of Provost of the University of Pennsylvania.—To those who have had any adequate conception of the enormous labor, physical and mental, carried on during the past thirteen years by Provost Pepper in connection with his duties as physician, professor, and chief administrative officer of the University of Pennsylvania, it has seemed simply marvellous that the human organism could endure such a strain. Dr. Pepper says it has now become necessary for him to choose between administrative work and medical science, and that his devotion to medicine has compelled his choice. The resignation was accompanied by a check for $50,000, in subscription to the fund for the extension of the University Hospital buildings. Dr. Pepper retains his connection with the Medical Department of the University. Dr. Pepper graduated from the Classical Department of the University in 1862, and from the Medical Department in 1864. He was Lecturer on Morbid Anatomy from 1868 to 1870, Lecturer on Clinical Medicine from 1870 to 1876, and Professor of Clinical Medicine from 1876 to 1877, when he succeeded Dr. Alfred Stillé in the Chair of the Theory and Practice of Medicine. In 1881 he was unanimously elected Provost, which position, in connection with the professorship in the Medical School, he has since held with such marked distinction and with incalculable advantage to the welfare and prosperity and advancement of the University. It is with a wholly justifiable and honorable pride that Dr. Pepper, in his letter of resignation, recounts the splendid progress made by the University during the time of his administration. Surely the gratitude of the institution, of Philadelphia, of the State, nay, of Education, are due him for a devotion and self-sacrifice rarely if ever equalled; and to these the profession of medicine adds a most hearty tribute of appreciation and of pride in the achievements and honors of one of its members.

Professional Tolerance of Illegally-practising Quacks.—We already have entirely too many quacks within the

profession whom we must tolerate; why, then, should we encourage by indifference the degreeless quacks, and those who are criminals in the eyes of the law? In one raid the New York police lately arrested sixteen abortionists. When the medical societies of a city employ no agent to ferret out such scoundrels, when all goes on silently and smoothly—there, assuredly, the vile work of the criminal quack and abortionist is active and unchecked. Not only this, but when hunted out of one city, or intimidated by prosecution, like their brother criminals of every stripe, they flock to neighboring cities where they can "work" without interference. To every physician there constantly comes the knowledge that these wretches are among us, the results of their crimes continually being left for him to repair as best he may, to keep silent about, and hence, really and indirectly to encourage.

The Refractionist is the name of a new "journal of practical ophthalmology," issued from Boston under the editorial care of Dr. Francis F. Whittier, in association with Drs. R. J. Phillips, W. F. Southard, M. F. Coomes, W. E. Baxter, J. W. Park, E. M. Marbourg. We are glad to see this new journal protesting in a practical way against the custom of opticians prescribing glasses. It announces that its advertising pages will not be open to such opticians. It is time the profession was aware of the injury to the public and to the profession by druggists, opticians, and instrument-makers entering into open competition with physicians in the treatment of disease. Sooner or later that sort of thing must end. Why not sooner?

SOCIETY PROCEEDINGS.

THE ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

Held at Rome, from March 29 to April 5, 1894.

(Continued from p 442.)

Section of Surgery and Orthopedic Surgery.

Sir Spencer Wells, Sir W. Stokes, and Prof. Macewen were nominated as Presidents, and Mr. Noble Smith and Dr. David Newman were elected honorary secretaries.

Dr. Lucas Championnière demonstrated the good results obtained in the treatment of true epilepsy due to traumatic causes, as distinguished from those effected in the Jacksonian form of the disease. The report dealt with sixty-four cases in which operation had been performed. Of these, ten were cases of recent injury; the remainder were operated on for cerebral disease, either without injury to the skull or succeeding such injury. The method adopted consists in opening the skull with the crown of a trephine, and enlarging the opening in any desired direction by means of straight or curved pliers. Among the ten cases there were three deaths in cases operated on in a desperate condition. Among the fifty-four cases there were seven deaths; in two cases in which the period of survival was short the lesions were gross.

Prof. Macewen formulated the following conclusions: (1) All abscesses of the brain are formed subsequently to a primary focus of infective disease situated elsewhere; (2) the chief infective foci are formed in connection with middle-ear disease; (3) abscesses of the brain originating in middle-ear disease are generally in direct contact with the primary source of infection; (4) such abscesses are generally reached in the first place through the mastoid antrum; (5) the mastoid antrum is most easily opened through the supra-mental triangle, from which the whole tegmen antri and tegmen tympani may be exposed; (6) it is necessary to remove the whole infective tract; (7) after this has been done the skull is opened over the temporo-sphenoidal lobe of the brain.

Drs. Massa, La Vista, and d'Antona took part in the discussion.

Dr. d'Antona read a paper on "Resection of the Trigeminal Nerve," and described minutely the changes produced by impaired innervation upon the tissues previously supplied by the nerve.

Mr. Mayo Robson presented a table of all the operations, eighty in number, that he had performed on the gall-bladder and bile ducts. The operations included cholecystotomy, cholecystectomy, cholecysenterostomy, choledochotomy, cholelithotrity, and exploratory procedures. Of operations for gall-stones all of the cases had recovered but one, in which choledochotomy had been performed, and an accidental opening in the bowel, made on separating adhesions, escaped observation at the time of the operation. Sounding as an aid to diagnosis or aspiration of a distended gall-bladder as a means of treatment was not deemed advisable. For calculi impacted in the ducts, crushing the stone *in situ* was considered preferable when they were soft enough, and choledochotomy when cholelithotrity could not be accomplished.

Dr. E. Loumeau read a paper on "The Surgery of the Urinary Passages." In the treatment of painful cystitis in the male he advocated hypogastric drainage of the bladder. Seven cases were reported successfully treated in this manner. When the bladder is intolerant to the presence of a catheter a short and rigid canula might be employed. A belt with a urinal attached was shown, which enabled a patient to walk about with a catheter permanently inserted in the bladder.

Mr. Reginald Harrison read a paper on "The Treatment of Some Forms of Stone in the Bladder by Perineal Lithotrity." The report dealt with four hundred operations for stone in the male bladder, including fifty-six in children in which lateral lithotomy had been performed. The operation proposed consisted in making an opening in the membranous urethra at the apex of the prostate gland, on a grooved staff passed along the urethra, sufficient to admit the introduction of a Wheelhouse, small, tapering gorget, and subsequently the index finger into the bladder, and the use of a crushing forceps with a cutting rib within the blades, the more powerful instruments being fitted with a movable screw on the handle. The fragments may be subsequently withdrawn by means of aspirator-catheters passed through the wound, or even with the aid of forceps. The perineal wound should correspond in size with the evacuating catheters, which should be about the size of an index finger.

Mr. Noble Smith read a paper on "Spasmodic Torticollis and its Cure by Operation," formulating the following conclusions: (1) When the spasm is confined to the sterno-mastoid, removal of a piece of the spinal accessory nerve before it enters the muscle may be relied

upon as an absolutely certain curative remedy; (2) should there also be spasm of the splenius capitis or other muscles, operation upon the nerves supplying those muscles will also certainly be necessary, with the expectation of absolute cure; (3) as the nerve-supply to these posterior muscles is less definite than that to the sternomastoid it is probable that some slight spasmodic action may remain for a few weeks after operation; (4) ablation of pieces of the external branches of the posterior divisions of the second, third, and fourth cervical nerves is effectual in cutting off the nerve-supply of the splenius capitis; (5) no noteworthy disability remains after operation upon the spinal accessory nerve and the cervical nerves of one side, and even if the accessory nerve of one side and the cervical nerves of both sides are divided only a trivial amount of weakness remains.

Dr. Thomas H. Manley read a paper on the "Symptomatology and Diagnosis in Spinal Traumatism." He pointed out the infrequency of fracture of the spine except as the result of the application of great and concentrated physical force. In the majority of cases it is confined to the spinal apophyses, though occasionally it may extend into and involve the vertebral bodies.

Traumatic disorganization of the vertebral bodies, when of limited extent, is wanting in those ordinary serial signs so conspicuously present in fracture elsewhere. It may be said that fracture of the spine has no definite symptomatology, and it is only when there is very marked deformity, with mobility of the fragments, that one is warranted in assuming its presence. The presence of paraplegia in itself is no proof of vertebral fracture, for it may occur without bone-disorganization, and *vice versa*. In experimentation on dogs it was proved that in seven cases in which the vertebral column in different segments was forcibly fractured, no paralysis of any kind occurred, except in those in which the fragments were displaced inward on the spinal marrow. Of all the osseous structures in the body, the vertebræ after fracture manifest the least tendency to displacement. This is because of their powerful and numerous ligamentous supports, their peculiar conformation and imbricated arrangement. It is only when the fragments become displaced and are driven in on the spinal cord, that spinal fracture becomes a serious accident. There is every reason to assume then that vertebral fracture is more common than is generally supposed, or that it is seldom a cause of serious constitutional disturbance, except when internal complications are present.

Of late years, free exploratory incisions have been recommended as an aid to diagnosis in this type of fracture; it being maintained that aseptic division of the healthy tissues, for purposes not only of searching out the lesion, but also, if necessary, of reaching and operating on the bone if found shattered and displaced. It had been alleged that if we could safely open the cranium and expose the brain with readiness and general safety, we might do the same with the spinal cord; but for obvious anatomic reasons this assumption is not reasonable. In all cases incisions along the lateral grooves over the vertebral arches are attended with an unmanageable hemorrhage of alarming degree. Even now, if there be fracture with no displacement, it may escape detection; at all events, when the body is involved, it is quite impossible to detect a fracture through it by way of the spinal canal, posteriorly, with the cord and nerve-roots lying over it. In all grave fractures with marked displacement, the cord is quite totally destroyed at the point of compression at the moment of injury, and in this class serious coincident internal injuries are commonly present. This is the only class in which for a moment the question of laminectomy is to be considered; but if, by an exploratory incision, we are made cognizant of the actual vertebra involved, and the precise extent of medullary compression present, what will that avail us, for the conducting properties of the medulla spinalis are permanently interrupted?

Not only is spinal fracture difficult, and as a rule quite impossible, of detection when deformity is absent in the living; but even on the dead subject it may be entirely overlooked, unless special pains are taken and the autopsy is conducted in a manner appropriate for this class of lesions.

A post-mortem examination of the spine is always a tedious task, requiring special skill for its proper performance. An examination of this description by the inexperienced is of little value, for the reason that the parts are so mutilated that it may be difficult to determine how much was damaged by the injury, or how much by the misdirected, violent manipulation of the inexperienced operator. Many times these autopsies must be conducted hurriedly, without ample light. As a common practice nothing but the posterior plane of the spine is opened, and hence, only this area can be inspected; but, in order that the examination be thorough and exact, the whole spinal column must be scrutinized, stripped nude of all its investing soft parts anteriorly and posteriorly. In order to accomplish this, the whole column should be removed *en bloc* from the occiput to the sacrum; brought into a clear, strong light, and then, segment by segment, be cautiously manipulated and inspected; after which it may be returned into the breach from which it was removed, and fixed in position. Only by this method is it possible to make an autopsy on the spine which possesses accurate scientific value.

Section of Obstetrics and Gynecology.

Dr. Robert Barnes presented a memoir in Italian on "General Physiology and Pathology, Illustrated by the Study of Obstetrics."

Dr. Schmeltz presented a communication upon "The Use of Catgut Threads as a Means of Draining the Uterus and its Appendages." He enumerated the following conditions in which such a procedure was indicated: 1. Puerperal, catarrhal, or gonorrheal metritis; 2. Chronic catarrhal or purulent salpingitis; 3. Uterine displacements; 4. Amenorrhea and dysmenorrhea; 5. Atresia of the cervix uteri.

Dr. Granville Bantock read a paper entitled "A New Method of Operation in Certain Cases of Supravaginal Hysterectomy." After the application of a temporary elastic ligature around the uterus the peritoneum is divided for a short distance in advance of the ligature. The uterus is then separated from its loose connections in front, leaving a thin layer of uterine tissue attached to the peritoneum. When the body of the uterus is thus isolated as low as the level of the elastic ligature, about that of the internal os, the *serre-nœud* is at once applied and the uterus cut away. After the removal of

the ligature, the parietal and visceral layers of the peritoneum are sutured, and to prevent retraction double sutures are additionally used, one at the lower end of the wound next the pubes, and the other two on each side, passing through the whole thickness of the parietes, and tied over a small roll of gauze to prevent cutting through the skin. At the angle of the parietal wound above the stump the peritoneal edges are secured to that part of the envelop which covers the back of the uterus by means of two interrupted sutures, the first of which catches up the parietal peritoneum a quarter of an inch from the edges, the second involving the edges only, thus forming a sort of collar around what, for convenience' sake, may be called a stump. The remainder of the wound is closed in the ordinary way. Thus the whole of the raw surface is outside of the peritoneal cavity and the sac formed is packed with iodoform-gauze. The ovaries may be removed at any convenient stage of the operation.

Dr. Sinclair read a paper on "The Relation of Pregnancy to the Operation of Ventro-fixation." The conclusion was promulgated that, after making full allowance for the element of risk and the incidental drawbacks, the operation of ventro-fixation is not only justifiable, but is indicated in a certain limited class of cases of retroflexion of the uterus with complications.

Section of Internal Medicine.

Sir Dyce Duckworth read a paper on "The Rheumatic Nature of Chorea," in which he took the position that chorea is a cerebral form of rheumatism affecting the cortex. He pointed out that lesions may be found in the heart that during life and after death are indistinguishable from those found in rheumatism. While shock, mental overwork, or psychic emotion are viewed as the causes ordinarily producing chorea, these give rise to the disease only in children that have inherited a rheumatic taint. The symptoms of chorea point to the action of certain systemic poisons having a close affinity to those that give rise to the symptoms of rheumatism.

Dr. Saundby discussed the question of "Diet in the Treatment of Diabetes." He proposed that diabetics should be permitted to eat as much carbohydrates as they could assimilate without increasing their sugar-elimination. He has found that the majority of diabetics can take a moderate amount of carbohydrates without injury.

Dr. J. Schreiber read a paper on "The Different Forms of Sciatica and their Treatment." Basing his opinion upon observations in five hundred cases, he stated that in a large majority of cases the sensory troubles and the affections of locomotion were due to a rheumatic condition of muscle, tendon, fascia, ligament, or joint, rather than to any inherent neuroses. In female subjects the existence of puerperal peritonitis might complicate the symptomatology.

Dr. Reger read a paper upon the way in which infective diseases are spread, in which he stated that in his opinion the microörganism of a disease produces effects only when it is mature, and that the breaking out of the malady and the migration of germs to other people take place at the same time, the periods of incubation and of desquamation not being contagious.

Prof. Queirolo showed several *post-mortem* specimens from animals in which he had removed the liver from the circulation by uniting the portal vein with the vena cava inferior. He described his method of operating, and gave a brief review of the results he had obtained.

Drs. Rummo and Albertoni criticised Professor Queirolo's methods and results, and Professor Baümler considered that the toxins, not being eliminated by the liver, would be sure to produce diarrhea.

Dr. G. Zagari stated that as the result of his experiments he had come to the conclusion that the liver had important functions in the destruction and elimination of toxins and of bacteria.

Dr. de Backer communicated the result of an extensive series of observations upon the injection of sterilized cultures of yeast in the treatment of certain infectious diseases, especially tuberculous affections, and stated that this method of treatment had in his hands been most successful.

Dr. Mendizabal read a paper on "Influenza," in which he discussed the most important clinical varieties.

Dr. Szillai read a paper in which he stated that he had obtained good results from the treatment of croup with hydrochlorate of pilocarpin.

Dr. Revilliod read a paper, in which he drew attention to the great frequency of tuberculosis in man, and of the large number of cases in which an apparently complete cure occurs.

Dr. S. Bernheim read a paper in which he stated that immunized serum had a specific vaccinal action against tuberculosis.

Dr. S. Laache strongly advocated the early resection of a rib in empyema; and Prof Baümler advocated early aspiration of the chest, and, if necessary, resection of a rib in empyema in tuberculous patients.

Dr. O. Schrön read three papers, in the first of which he described and pointed out the diagnostic import of certain crystals which he had found in the sputa of tuberculous patients; in the second, he suggeated a new method of discovering tubercle-bacilli in sputum; and in the third, he recorded finding coccidia containing tubercle-bacilli in symbiosis in the lung in a case of rapid tuberculosis.

Dr. E. Grande stated that in his opinion corrosive sublimate and methylene-blue may be used with advantage in the treatment of pulmonary tuberculosis.

Dr. Crisafulli read a paper in which he stated that, in his opinion, traumatic and rheumatic tetanus are identical.

Dr. C. Forlanini gave reasons for considering that the production of pneumothorax artificially was only of value in pulmonary tuberculosis if done in the early stages.

Dr. E. Pittarelli described a new form of combined aspiration and injection syringe.

Dr. F. Rivolta discussed the etiology of pulmonary edema in croupous pneumonia, and Dr. F. Chaborg read a paper upon the influence of nasal affections upon various diseases of the pulmonary organs.

Amongst the many other papers read the following were of special interest: Dr. Carmon y Valle suggested that the muscular incoördination in locomotor ataxy is due to unequal relaxation of the muscular fibers. Prof. Stokvis described a method for the ready detec-

tion of hematoporphyrin in the urine, and stated that he considered its discovery to be of some diagnostic value. Dr. Fraser discussed the treatment of myxedema by thyroid gland, and also described a case of pernicious anemia which had received benefit from bone-marrow. Dr. E. Guerra described a case of solitary tubercle in the neighborhood of the right fissure of Rolando. Dr. Gouvea recorded an interesting case of apparent pulmonary tuberculosis which was shown to be pulmonary distomiasis by the discovery of a distoma hepaticum in the expectoration. Dr. Calabresi stated that the presence of either sugar or uric acid in the blood lessened its bactericidal power, and that quinin increased it. Dr. Da Rocha discussed the pathogenesis of those cases of diabetes characterized by dilatation of the stomach and diminished peristalsis of the intestine. Dr. De Renzi stated that he had produced diabetes by excision of the duodenum and of the salivary glands, and that in his opinion the diet in diabetes should, at any rate at first, be purely vegetable. In some cases such a treatment had in his hands resulted in the complete disappearance of sugar from the urine. Dr. A. Giovanni spoke of the necessity of treating the individual rather than the disease, each individual being characterized by a predisposition to a special class of disease. In his opinion, human beings can be divided into three groups, the first consisting of those who were especially liable to diseases of the respiratory organs, the second of those who had a predisposition to diseases of the circulatory organs, and the third of those in whom the digestive organs were especially liable to be attacked. Dr. A. Jolles described a method for approximately determining the quantity of biliary pigment in the urine. Dr. Tison stated that he had found aconitin nitrate of some value in the treatment of erysipelas, neuralgia, and laryngitis. Prof. Bouchard detailed clinical cases which had led him to conclude that the early appearance of pruritus in icterus suggested the presence of a neoplasm. Dr. Baccelli read a paper upon a special method that he had devised for making heart-measurements. He stated that the total action of the heart can be reduced to a parallelogram of forces, and if the movements of the heart are to be understood, they must be considered as a whole, and not as consisting of distinct systolic and diastolic phases. So far, experiments upon animals have not in his opinion resulted in solving the problems presented by the apex-beat, and if they are ever to be solved, he considered that it must be by looking at the movement as a systolic-diastolic one, and as being due not to the action of any one part of the heart, but to the movements of the heart as a whole, including those of the large vessels.

Section of Pathology.

Prof. Guarnieri stated that for some years he had been working on the question of the etiology of vaccinia and variola. He referred to the researches previously made in order to discover the active agent of both diseases, and showed that all attempts at isolating it had proved fruitless. Most of the previous investigators had thought that bacteria were the causative agents of this disease, but, from his own observations, he concluded that the active agents of vaccinia and variola were, in all probability, protozoa. He had found in the epithelium of the pustule of vaccina and variola a parasite which resembled some well-known protozoa. It was a small, round body, easily stainable with hematoxylin, lying in a clear vacuole in the protoplasm of the epithelial cells. It was constantly present in both diseases, and when vaccinia or variola was inoculated on the cornea of the rabbit, the cells of the epithelium of the cornea were found to contain these parasites in large numbers. He had been able to see the movements of the parasite, and he considered that it multiplied by simple division into two or more young protozoa. He thought that, although he could not bring absolute proof that this was the cause of vaccinia or variola, yet, in all probability, considering its constant presence in all cases, it would ultimately be proved to be so.

Prof. Monti stated that, from his own researches, he had come to the same conclusion as Prof. Guarnieri.

Dr. M. Armand Ruffer said that, in conjunction with his friend Dr. Plimmer, he had examined a large number of vaccinia-pustules in the cow, in the monkey, in man, etc., as well as three cases of severe variola, and that in all these he had found the cell-inclosures described by Prof. Guarnieri. He had seen that the epithelium in the neighborhood of these structures penetrated deeply into the tissues around, and that in this way appearances much resembling the early stages of carcinoma were produced. These bodies, he considered, were most probably parasites, though he was unable to assign to them their proper place in the animal kingdom. They differed essentially in their staining-reaction and in their appearance from those previously described by Pfeiffer, Van der Loeff, and others, and also from the carcinoma-parasites, as described by Prof. Foà himself, and others. He had, with Dr. Plimmer, studied minutely their occurrence in the various stages of the formation of the vaccine-pustule, and had been able to obtain a characteristic staining-reaction, founded on the combined use of carmin and Lichtgrün.

Prof. Hansemann gave an account of the morbid changes found in the pancreas of diabetic patients after death. He said that numerous experiments on dogs had shown that the total extirpation of the pancreas was followed by diabetes. He asked himself whether the facts of human pathology showed that there was a connection between disease of the pancreas and diabetes or not. In his opinion, diabetes might exist without disease of the pancreas, but in 50 per cent. of all cases diabetes was associated with disease of the pancreas; the most frequent lesion was simple atrophy, which might be easily distinguished from the cachectic atrophy. Moreover he found sclerosis due to an excess of fibrous tissue; atrophy, after blocking up of the duct, through tumors, etc. This last disease only led accidentally to diabetes—that is, when the atrophy had gone far enough; but the real primary atrophy of the pancreas was the disease which produced diabetes, even in the early stages of the disease. Diabetes occurred seldom only in cases of necrosis of the pancreas, owing to the rapid course of this disease, as it took time for the glycosuria to be established; however, as it often disappeared just before death in cases of total extirpation of the pancreas, there was not sufficient time left for the appearance of the glycosuria. Carcinoma, as a rule, did not produce diabetes, because the

carcinoma-cells, being descended from pancreas-cells, no longer secreted, but were able to fulfil their function—that is, the internal secretion.

Dr. John Lindsay Steven read a paper on "Necrosis of the Pancreas and its Association with Fat-necrosis." A short summary of the literature was given, and the work of Zenker, Balser, Chiari, Fitz, and Langerhans was more particularly referred to. Two cases of pancreatic disease associated with multiple fat-necrosis were then related in detail. The first occurred in 1889, and was that of a very stout man, a heavy drinker, aged thirty, who died after an illness of four days, during which the symptoms were mainly those of acute intestinal obstruction with collapse and fulness in the epigastrium. At the post-mortem examination there was found multiple fat-necrosis of the abdominal fat, with hemorrhage, enlargement, and infarction of the pancreas. The second case was that of a woman, aged thirty-four, who had been suffering from gastric pain for five months, since the birth of her last child. An obscure tumor was detected during life in the upper part of the abdomen, but it was impossible definitely to make out its precise nature. After death entire sequestration of the pancreas was discovered, the necrosed organ being contained in a large peripancreatic peritoneal cyst containing inky-black fluid. Here also there was a multiple fat-necrosis, and the body was very obese. In neither case was there anything remarkable in the other organs of the body. A short statement of the microscopic appearances was then given, after which the author formulated his conclusions thus: (1) In fat-necrosis and necrosis of the pancreas we have two distinct and independent lesions—that is, the one may exist without the other. It is possible, also, that fat-necrosis occurring in very fat subjects may be analogous to coagulation or caseous necrosis occurring in the central parts of a large neoplasm. (2) If fat-necrosis be very extensive it may lead by confluence of neighboring areas either to localized or complete necrosis of the pancreas; and the two cases recorded may be looked upon as illustrating different stages of the same process. It is necessary, however, to place pancreatic necrosis arising from this cause in a category by itself.

Dr. O. Israel spoke on the "Comparative Pathology of Necrosis." He said that practically the necrosis of the cells of the vegetable and animal kingdoms was one and the same process, and he gave an account of the various appearances seen during the process of dying and after death.

Prof. Roger spoke of "The Functions of the Liver in Infectious Disease." He said that most infectious diseases might determine anatomic lesions and functional disturbances in the liver. The lesions varied not only in different diseases, but even in one and the same disease, following its course in animals of different or the same species. In tuberculosis, for instance, one saw that the disease produced vitreous degeneration of the liver-cells of the fowl, amyloid degeneration of the same cells in pheasants, true tuberculosis or sclerosis of the liver in guinea-pigs, and in rabbits tuberculosis of a special cachexia. With a microbe which he called the bacillus septicus putidus, he had produced in the liver thrombosis, hyaline degeneration, embryonic tissue, and systematic periportal thrombosis. All these lesions he had also produced with the soluble substances contained in the cultures of this bacillus, and they were, in fact, all caused by the same toxic process. It was not enough to know the anatomic lesions of the liver without studying the state of its functions. It was well known that the liver arrested and transformed a large quantity of poisons brought to it by the portal vein, and more especially the microbic poisons, this function being, as he had shown, connected with the presence of glycogen. He was led to inquire what became of the glycogen during infectious diseases. He studied, in rabbits, anthrax and the disease produced by streptococci, and he saw that the quantity of glycogen contained in the cells remained normal during the first stages of this disease, in spite of the rise of temperature, which might exceed 103°. The quantity of sugar in the blood did not vary. Later on, when the serious symptoms appeared and the temperature became lower the glycogen gradually disappeared, the sugar in the blood increased, and in cases of anthrax might contain 2 or 3 per 1000 of sugar; but on the contrary the sugar diminished or disappeared in the disease due to streptococci. One might conclude from these facts that, in spite of the fever, the liver might continue to destroy the toxins which were formed during acute diseases. These results had many clinical applications. They enabled one to understand the seriousness of infectious diseases in patients in whom the liver has been previously the seat of disease. It would appear, according to some observations of Professor Roger, that the lesions of the liver were a predisposing cause in producing delirium tremens; but infectious disease occurring in the course of an hepatic disease was very often mortal, owing to the diseased state of the liver-cells.

Interesting papers were also read by Profs. Marchiafava, Bignami, and others, on the minute structure of the malarial parasites.

Section of Diseases of Children.

Prof. Baginsky described the Kaiser und Kaiserin Friedrich Children's Hospital in Berlin, and explained its construction and administration. His remarks were illustrated by plans and diagrams. The most striking feature in the administrative work of the hospital appeared to be the care taken to exclude all sources of infection, not only infections from scarlet fever and other exanthematous disorders, but also infection through air, water, and milk, which are, there can be little doubt, responsible for much of the diarrhea and bronchitis which now decimate so many children's hospitals in summer and winter respectively.

Dr. J. Bauzen read a paper on "Icterus Neonatorum," in the course of which he said that he had found that 57 per cent. of all children were at birth affected to some extent with a benign form of icterus. His observations were made in private practice, and compared with those made in hospitals—80 per cent.—showed a smaller proportion. As a rule, the icterus was not accompanied by any symptoms. It was due merely to the effusion into the cutaneous structures of coloring-matter derived from a degeneration of the blood-cells. Too early ligature of the cord was apparently a determining cause, the predisposing cause being some condition of general debility. He divided the more serious cases, in which the icterus generally came on later, into three main cate-

gories: (1) due to venous blood-changes; (2) due to abnormal destruction of biliary pigments; (3) due to hepatic derangements, and indicated numerous subclasses.

Dr. A. Titomanlio read a careful paper in which he sought to prove that congenital syphilis was a much more common cause of hydrocephalus than was generally supposed. As a rule the cases were chronic, but occasionally subacute or acute. Generally the acute cases were those which came on at an early age, the chronic those which developed later. The old belief in the value of mercury in hydrocephalus was probably founded on the existence of these syphilitic cases, and Dr. Titomanlio recommended inunctions of calomel, combined with the administration of iodid of sodium or potassium.

A paper by Dr. Celli on "Vaccination in Whooping-cough" led to a prolonged but desultory discussion, in which the author's view that vaccination had any influence over the disorder did not meet with much acceptance.

Section of Dermatology and Syphilography.

An interesting discussion on the nature of eczema was opened by Dr. Schwimmer.

Dr. Breda considered the microörganisms found in eczema as secondary and not the cause of the disease.

Dr. Kaposi considered that such forms of eczema as impetigo and eczema marginatum are probably caused by microörganisms, which grow on a skin predisposed to their invasion. He insisted, with Hebra, that typical eczema can be provoked in normal individuals by extraneous causes, such as heat, chemic action, etc., and that a lowering of the general nutrition will so affect the skin that it will be unable to resist the effect of such external irritations. Eczema, indeed, should be regarded as an inflammation of the skin which may be complicated by many concomitant conditions.

Several other members spoke on the subject, including Dr. Neisser, who believes that eczema is caused by microörganisms, and that impetigo contagiosa is a separate disease.

Dr. Kaposi related a case of peculiar growths on the scalp, of the nature of molluscum fibrosum, but malignant, and exhibited a beautifully-executed model.

Dr. Radcliffe Crocker stated that a case of similar character had been shown in London by Mr. Morrant Baker, and that it was proved to be a sarcoma, but a curious point was that some of the growths became absorbed.

A paper on "Syphilis d'Emblée" was read by Dr. Verchère, who believed that syphilis could be contracted without the usual initial lesion. He reported three cases which had been under close daily observation from the beginning, and alluded to experimental inoculation from them in which no chancres were produced.

Dr. Reale showed a large number of cultivations of the fungi microsporon furfur and M. minutissimum.

Dr. Giovannini detailed the histologic appearances observed by him after electrolytic epilation.

Section of Laryngology.

A discussion on the scope and limits of the surgical treatment of laryngeal tuberculosis was opened by Dr. Gouguenheim. He expressed himself a strong partisan of energetic surgical interference even in the most advanced cases, recommending the use of a punch-forceps for the removal of the diseased arytenoid cartilages—arytenoidectomy.

Dr. Heryng related instances of recovery as far as the larynx was concerned from surgical treatment, and showed a form of forceps with various attachments adapted for cutting in every direction. He stated certain indications and contra-indications, but admitted that they were not absolute. Tolerance, patience, and faith on the part of the patient were among the most necessary conditions.

Prof. Massei spoke very highly of the application to the larynx of a solution of pure phenol in sulphoricinate of soda, especially after the appropriate surgical treatment by means of curets or cutting-forceps, as introduced and recommended at the same meeting by Dr. Ruault, of Paris.

The tone of the discussion which followed indicated a strong feeling in favor of very great moderation in surgical activity in cases of laryngeal tuberculosis.

Dr. Bronner read a paper on "The Intra-tracheal Injection of Medicated Fluids."

Dr. Dundas Grant exhibited a safety endolaryngeal forceps.

Section of Otology.

Dr. Ludewig contributed a paper recommending the more extended practice of the operation of removal of the ossicles in chronic otorrhea.

Prof. Ferreri, while approving of it in the main, referred to the possibility of infecting the site of operation, and dwelt on the necessity for the thorough employment of the caustic treatment.

Dr. Dundas Grant exhibited and described a magnifying aural speculum adapted for operations, and a recurved bistoury for aural furuncles.

Section of Hygiene.

Dr. Pagliani presided.

A discussion on quarantine was introduced by Dr. L. Csatáry de Castar, who proposed that the Section should adopt a resolution to the effect that quarantine, especially land quarantine, was useless.

A short discussion took place, in the course of which Prof. Ruata observed that it was important that, under the pretence of "isolation," quarantine should not be reëstablished.

No speaker opposed the resolution, which was unanimously adopted.

The subject of the prevention of cholera was raised by Dr. Bocci, who stated that by the adoption of isolation and disinfection, cholera, which had appeared in the province last year, had been held in check, so that only some 100 cases had occurred, and the disease had never become epidemic.

Dr. Paolo Merlo described the precautions taken at the seaports, which had been most successful; in no case had the disease spread from them. Infected ships were sent to the Island of Asinara, an island off the coast of Sardinia, where they underwent disinfection.

Prof. Pagliani spoke of the general precautions taken in Italy, and presented an elaborate report.

Dr. Terni showed that in 1884 cholera reached the

head-waters of the Brembo, the infecting agent being a man who had arrived from Marseilles suffering from the disease. Subsequently all the villages and towns on this river suffered from epidemic cholera, but only these villages; others in the neighborhood drawing their water-supplies from other sources escaped.

A discussion on vaccination was opened by DR. LEONI, who described certain experimental researches which had enabled him to make improvements in the method of preparing the vaccine. He described the sources from which the lymph might become contaminated by pyogenic organisms, and detailed the precautions taken to obtain a lymph which was pure but specifically powerful. He spoke strongly as to the value of vaccination as a prophylactic.

The subject of alcoholism was introduced by DR. FAZIO, who presented a large series of statistics, which showed that excessive consumption of alcohol was nowhere prevalent in Italy to anything like the extent which prevailed in the northern countries of Europe. Curiously, also, it appeared that alcoholism was more common within the bounds of Italy in the northern provinces, Lombardy and Venice, than in the southern provinces of Umbria, Tuscany, and Rome, and least of all in the province of Naples and in Sicily.

The question of the necessity for some effective test of the competency of plumbers was brought before the Section by MR. COLES and DR. W. R. SMITH. The importance of good plumbing-work as a link in the chain of sanitary security was generally recognized. After some discussion a resolution was adopted, recommending the Director of Public Health to inquire into the matter, with the view of establishing a system of registration of qualified plumbers in Rome and other Italian cities.

At the conclusion of its work the Section of Hygiene visited the works on the Tiber, which are on a very large scale. The river for the whole extent of its course through the city is being enclosed in embankments of great height and massive construction. The work, which has involved an enormous expenditure not only in the actual construction of the embankments, which are of masonry, but also in the reconstruction of bridges and the rearrangement of sewers and drains, will, it is hoped, have a very considerable effect in increasing the healthiness of the city by preventing the occurrence of floods. There will also be a considerable advantage in the substitution of broad, open boulevards along the riverside for all sorts of irregular buildings which formerly backed on to the river, and by their sewerage contributed to its befoulment.

SECTION OF MILITARY MEDICINE AND SURGERY.

The work of this Section was carried on with much spirit, and was largely attended, especially by officers of the Italian military medical department. Several interesting discussions took place, among which mention may be made of that on the arrangements of the sanitary service on shipboard in future naval engagements, having regard to the peculiarities of construction of warships of the present types and the novel conditions of modern warfare. To this discussion Inspector-General Macdonald contributed an opening paper, in which he discussed the ambulance appliances suited for the naval service both ashore and afloat. The discussion was continued mainly by Italian officers. Questions connected with the influence on military surgery of the introduction of the new small-bore rifles occupied much of the time of the Section, many papers dealing more or less directly with this subject being read, and two formal discussions thereon were arranged. One afternoon was devoted to an inspection of the great military hospital of Rome. During this visit Dr. Jacoby demonstrated two new patterns of stretchers in use in Germany, and Dr. Strauss explained the construction of the special stretchers employed in the French Army. The Section also inspected a hospital train, and made a journey in it to Tivoli.

PHILADELPHIA ACADEMY OF SURGERY.

Meeting March 5, 1894.

THE PRESIDENT, DR. WILLIAM HUNT, IN THE CHAIR.

(Continued from page 448)

DR. CHARLES B. PENROSE related "A Case of Abdominal Hysterectomy in which the Ureter was Resected and Implanted into the Bladder:"

I report this case because the immediate implantation into the bladder of a ureter, which has been divided during a celiotomy, is a rare proceeding.

The patient was a white woman, forty years old, who had a scirrhous carcinoma of the cervix uteri. The growth extended as high as the internal os, and infiltrated the left broad ligament, in a dense hard mass, to a distance of about one inch from the cervix. There was no involvement of the vagina. There were no symptoms of obstruction of the ureter.

Celiotomy was performed at the Gynecean Hospital in July, 1893. It was found that the left ureter passed directly through the hard mass in the left broad ligament; and in order to remove completely all diseased tissue it was necessary to excise about one inch of the ureter—the portion involved in the broad ligament.

After the uterus had been cut away at the vaginal junction, the distal end of the ureter was ligated with silk; the vagina was closed; the peritoneum was sutured over the seat of operation as much as possible; and the proximal portion of the ureter was then implanted into the body of the bladder. The operation was similar to, and was derived from, that used by Dr. Van Hook for uniting a ureter after complete transverse division, by lateral implantation of the proximal into the distal portion.[1] An incision was made antero-posteriorly in the body of the bladder, somewhat less than one-half inch in length. A needle armed with fine silk was passed through the bladder-wall from without in, at a point about one-third inch from the edge of the incision on the right, and brought out through the incision. It was then passed through the right wall of the ureter close to the extremity, carried back through the incision in the bladder and passed through the bladder-wall from within out, close to its point of entrance. A similar suture was passed on the left side of the incision in the bladder and through the left side of the wall of the divided ureter. Traction on these sutures dragged the

[1] Journ. Amer. Med. Assoc., March 4, 1893.

ureter into the bladder, and, when tied, they held it in this position.

The loose peritoneum, which formed a partial investment of the ureter, was drawn down and sutured to the peritoneum of the bladder by a continuous silk suture around the line of union of the ureter with bladder. The abdomen was closed without drainage. A soft rubber catheter was introduced through the urethra and was retained for three days. The patient made an unusually easy recovery.

There were no symptoms of vesical or renal disturbance. The quantity of urine passed was as follows: 10 ounces in the first twenty-four hours; 26 ounces in the second twenty-four hours; 22 ounces in the third twenty-four hours; and 38 ounces in the fourth twenty-four hours.

The woman left the hospital twenty days after the operation. Her physician wrote me in December that she was perfectly well and doing her own housework. He wrote again in February—over six months after the operation—that she was suffering with pain in the right iliac region—perhaps a recurrence of the disease.

She has at no time presented any symptoms whatever of disease of the urinary organs.

Our text-books on surgery advise that, in case the ureter be torn or cut across during the removal of an abdominal tumor, the renal end must be brought out through an opening made for this purpose in the loin. And in some instances nephrectomy had been performed for the relief of such an accident.

The clinical and experimental researches of Dr. Van Hook, of Chicago (paper read at the Forty-fourth Annual Meeting of the American Medical Association, June, 1893), a recently-reported case of Dr. H. A. Kelly, in which a divided ureter was immediately united by lateral implantation of the proximal into the distal portion, and the case just reported, go to show that the advice of our surgical text-books should be modified; and that, if the patient is able to endure a slightly prolonged operation, and the anatomic conditions are suitable, it is better immediately to implant the proximal portion of the ureter into the distal portion, or into the bladder.

Dr. Thomas S. K. Morton read a paper entitled "Conditions Justifying Removal of the Testicle in Radical Operations for Inguinal Hernia; with a Report of Three Successful Cases."

I am not here to advocate the indiscriminate sacrifice of an organ usually so highly prized as the testicle, but simply to point out certain of the conditions which would appear to me to jutify the procedure and to relate three cases in which I have considered it best to resort to it. These cases represent the total number in which I have deemed it prudent to add ablation of the gland to formal procedures for the radical cure of inguinal hernia, for instances are rare in which this course may be considered justifiable, and must become constantly more and more so as radical procedures become perfected.

With the operations proposed by Bassini, Postempski, and Halsted, together with their modifications, when the cord is displaced entirely from the inguinal canal, and, in the last, even removed from the internal ring to an entirely new opening made for the purpose in the muscular structures of the abdominal wall, the presence of the cord has almost ceased to be a hindrance to seemingly ideal radical cure. Hence any temptation to sacrifice the testicle vanishes, and the conditions necessitating or permitting such removal become correspondingly more circumscribed.

Removal of the testicle in operations for inguinal hernia would, therefore, in my estimation, be practically limited to the following conditions:

1. Certain cases of undescended testicle.

Here, if the testicle had entered the canal and was degenerated or otherwise diseased, or could not be separated from the sac without endangering its vitality, or if it was manifestly functionless, it might be removed without reluctance. But if it were normal, or almost normal in all respects save position, it would be best, if possible, to displace the cord from the canal by one of the modern methods and attempt to bring the organ into the scrotum and there fix it by sutures; or it might be pushed within the abdominal cavity through the internal ring, and there permitted to remain after close suture of the ring.

2. In some rare cases of congenital hernia.

Removal here must be very exceptionally called for with so many modern operative resources at hand.

3. In certain cases of chronic or acute disease of the testicle or cord complicating hernia and demanding removal of the organ upon its own account.

4. In rare cases in which severe traumatism has occurred to testicle or cord during or before operation.

Accidental division of some or all of the vessels of the cord would not necessarily demand excision of the testicle unless other severe complications were present. Wounding or section of the vas deferens likewise might be consistent with retention of the organ. But when the gland has been stripped entirely from all other connections, such injury to its vascular supply would produce so much danger of necrosis that ablation would become imperative.

5. In certain cases in which sloughing of the sac or interrupted circulation of the cord or testicle has involved these latter structures in a suppurative or sloughing process.

6. Perhaps occasionally in the very aged, to simplify or shorten operation, or for some of the before-mentioned conditions of less degree than would justify the procedure in a younger individual.

There are no conditions, of course, except senility, that would excuse the removal of a testicle under circumstances in which it was the sole reproductive gland possessed by the individual; even more rare would be the conditions justifying removal of both testicles in bilateral hernia.

Surgeons must be exceedingly cautious not to interfere with so highly valued a part without either a very clear understanding with the patient before witnesses (and preferably in writing) preliminary to the operation, or else be certain that the conditions for which the organ is removed will be convincing to others of the necessity for such removal. It is obviously important also for the operator to carefully preserve the specimens for his protection in case of dispute.

One word more of caution. It is not the easiest matter to tie off the testicular cord in such a manner as to leave it absolutely secure against recurring or secondary hem-

orrhage after its return to the abdominal cavity; and bleeding from it originates a peculiarly dangerous form of shock quite independent of the amount of blood lost, and which often is speedily fatal. Moreover, the bleeding will not be likely to cease spontaneously in the warm and moist peritoneal cavity to which the ligated stump has been returned, and an operation to secure it more firmly (if the diagnosis is made in time) would be a very formidable complication. Hence, excessive care must be exercised in its primary ligation. It should be transfixed and tied off in at least two portions. Silk is the only fit material for this purpose. A good button of tissue should be left above the ligatures, and, to be doubly sure, any apparent vessel-ends should be separately ligated upon the end of the stump before it is returned to the cavity. Searing the stump with a cautery below the main ligature would be equally, perhaps more, efficient than separate ligatures to the vessel-ends. If the cord were very large or edematous it should be ligated in even smaller portions.

CASE I. *Huge strangulated inguinal hernia; radical operation with removal of the testicle; recovery.*—Mr. M. C. B., a strong, healthy man of nearly fifty-seven years, strained himself fourteen years ago whilst pulling a heavy satchel across the floor. The satchel caught on a splinter, and, as a result of straining to dislodge it while in a stooping position, he felt something give way in the left groin, and became exceedingly faint. Shortly after this a small, reducible but constantly reappearing tumor came into the scrotum, and, as time went by, became gradually larger and larger.

Several years after the first appearance of the tumor, and when it had attained quite a large size, he became subject to occasional attacks of strangulation, which always required anesthesia for reduction. Then, after one of these attacks, a large portion of the tumor became irreducible, and so remained. After this when the seizures came on, strangulation could always be overcome by the reduction of a portion of the hernial contents, but the entire tumor could never be reduced. Several more attacks of strangulation occurred at varying times after this, when more intestine would become prolapsed, but relief was invariably obtained upon reduction of the newly prolapsed and strangulated portion. While strangulation lasted his chief symptom was always an agonizing dragging pain at the epigastrium. By wearing a truss over the site of the external abdominal ring, that portion of gut which prolapsed and became strangulated was more or less effectually kept up.

About 8 o'clock P.M., April 10, 1889, he felt the hernia slip out, and became a little faint and sick; but after lying down for a short time continued at his desk until midnight. At 1 o'clock A.M. he reached his home in West Philadelphia by street-car and foot from the city. His sensations were then different from anything that he experienced before, and he was certain that he was about to die—on similar occasions he had always been most confident and hopeful. At 3 o'clock A.M. he was seen by the late Dr. Michael Lampen, who always hitherto had been able to reduce the strangulation by taxis, and who, therefore, promptly placed the patient under anesthesia, but was unable to reduce the tumor after an hour's application of taxis. He, however, could not let up the ether on account of the man's terrific sufferings. Ether-narcosis, with an occasional application of taxis, had been kept up continuously from 3 A.M. to 8 A.M., when I saw the case in consultation. The patient's condition at the latter time was fairly good, but he was much depressed by the prolonged anesthesia. No fecal vomiting had occurred.

Upon examination an enormous left-sided inguinoscrotal hernia was discovered. It was fully as large as a man's head; the skin covering it was exceeding tense, shiny, and almost black from impeded circulation. Fluctuation was marked over the upper and outer portions of the tumor, whilst at the portion near the man's knees was present a large, semi-globular, boggy mass just beneath the skin.

Consent to operation having been obtained of the wife, taxis of a moment's duration was unsuccessfully employed, and operation at once proceeded with. Full aseptic measures prevailed throughout. A six-inch incision was made in the line of the tumor and inguinal canal, and carried down to the sac, which was punctured and torn to an equal extent. About a pint of brownish-tinged, odorless serum escaped from the opening, and the small intestine at once came into view. This was highly distended with flatus, almost black, and in places ecchymotic. The constriction was then sought for and found to be at the external ring. This was incised upward, and the prolapsed small intestine for a distance of three feet was—after it had begun to assume a pinkish color—with some difficulty returned to the abdominal cavity, a healthy portion having first been pulled down at each extremity, to make sure that no constriction existed at a higher or a lower point. Attention was now turned to the remaining prolapsed mass. This had the appearance of being an enormously hypertrophied omentum, and was not in the slightest degree congested or strangulated. Upon careful examination, however, this proved to be practically the entire colon (excepting possibly the cecum, which could not be recognized in the confused mass), as well as the omentum attached. This discovery was made by finding deep, between two layers of fat, a band of fibrous material through which muscular fibers coursed, and, later, by feeling a small fecal mass in the lumen. The bowel was absolutely collapsed, practically free from feces, and deeply buried in hyperplastic deposits. The mesocolon also participated in these changes, and was likewise rendered almost indistinguishable by a deposit of fat. Only a longitudinal half-inch strip of bowel could anywhere be brought to sight. The epiploic appendages were enormous. (An illustration that it should be an invariable rule to cut or ligate nothing about a hernia until absolutely sure of its nature.) The mass was separated from its many adhesions to the sac, but, from its great size, could not after separation be reduced through the abdominal rings, although these were much dilated. Hence the incision was enlarged upward along the inguinal canal, and the internal ring very freely divided upward upon the abdomen for a distance of several inches. The colon and omentum were then easily reduced, and attention was turned to the sac. This was found universally adherent and particularly to the peri-testicular tissues. Its dissection was finally accomplished up to and within the internal ring, where it was cut off and the ends sutured together. I did not employ the method of dealing with the sac in

this case that is advised by Macewen, because of the very large mass of perhaps devitalized tissue which would by that method have been returned to the abdomen. When the sac is not very large, however, that procedure is quite a favorite with me.

The left testicle was elongated, hypertrophied, and so enveloped by the sac as to give it much resemblance to a prolapsed kidney, but examination quickly demonstrated its identity. After the sac had been dissected up it was found that the testicle was left without any vascular attachment excepting through the cord. Then arose the question whether it should be allowed to remain. This, again with the consent of the wife, was decided in the negative for the following reasons: the organ was much hypertrophied and edematous, and likely would require more blood than could be conveyed to it by the perhaps bruised and occluded cord; the patient was fifty-six years of age; the opposite testicle was apparently quite healthy and normal; and, finally, a much more certainly radical operation could be done by having the cord out of the wound. Again, had the organ been allowed to remain, its life was by no means certain, and its necrosis might have made a very dangerous complication during convalescence. Hence the cord was ligated just below the internal ring and the testicle cut away. After being very certain that every vessel of the cord was firmly occluded by the ligatures, the pedicle was dropped within the abdomen. A glass drain-tube was placed in the extreme upper portion of the abdominal wound. Then a layer of deep sutures of chromic catgut was run along the muscular structure of the wound down to the internal ring, through that structure and down along the canal to and embracing the external ring, thus giving a secure and accurate apposition of all the parts concerned in the hernial opening unimpeded by the presence of the cord. Were I doing this same operation to-day I would probably not introduce the tube at all, but, if it were called for, would insert it through a separate median opening just above the pubis. However, in this case no harm resulted from leaving the upper portion of the wound weakened by a drain-tube orifice. The entire skin-wound was next approximated by interrupted silk sutures and a double-spica bandage applied over a copious dressing.

As soon as consciousness returned the man was put upon powders of calomel one-tenth grain, and podophyllin one-sixth grain, every hour. These he took for twelve hours, and then was placed upon one-dram doses of Epsom salts hourly. No food was permitted for twelve hours. With the assistance of an enema the bowels moved very freely the next morning. From the time of coming out of the ether until the following day the man was violently restless, pitching and tossing about the bed in an altogether uncontrollable manner. Somehow in the night he had, without the knowledge of those about him, managed to withdraw the drain-tube. This I found lying loose in the bed when I saw him early the the next day. The bowels having by that time moved freely, and the belly being entirely flat, I determined not to replace the tube unless compelled to do so. Jactitation was controlled by fifteen-grain doses of chloral.

On April 15th the belly was slightly distended. The man was still somewhat restless. The bowels again moved very freely. The temperature was not above normal. Violent bronchitis was present as a result of the prolonged anesthesia.

On the 16th the abdomen was much swollen, and there was nausea and non-fecal vomiting; there was much complaint of pain, and a racking hiccough was present; the bowels did not move on this day. I decided to reinsert the tube. I removed a stitch at the extreme upper portion of the wound and put a glass drain-tube down to the hollow of the sacrum, and through it drew off two ounces of the turbid, bloody, non-odorous serum. The wound was in excellent condition. I again put the man on fractional doses of calomel and podophyllin. The bronchitis was improving, but much purulent expectoration continued.

On the 17th the bowels were freely open. A small amount of serous, straw-colored fluid passed from the tube. Hiccough and vomiting continued obstinately. For these symptoms I ordered cocain one-tenth grain, cerium oxalate two grains, and sodium bicarbonate two grains every two hours.

On the 18th, vomiting and hiccough were entirely under control. The bowels moved of their own accord, and the abdomen was flat and painless. All discharge had ceased, and the tube was removed, as well as all of the skin-sutures. The patient was eating and sleeping well. The bronchitis had almost gone.

On May 4th the man sat up and began to get about; in two weeks more he was at his business again.

When seen about a year after the operation there was present a firm cicatrix, and no sign of return of the hernia. Up to the last time I heard from him, several years afterward, he continued entirely free from return of the hernia. (*Transactions of the Philadelphia County Medical Society*, 1889, p. 206.)

(To be concluded.)

CORRESPONDENCE.

A CASE OF TETANUS.

To the Editor of THE MEDICAL NEWS,

SIR: On June 14, 1893, L. M., fifty years of age, a teamster, came to me with a swollen thumb which, he said, he had struck the day before with a hammer, drawing blood, while driving a nail in his cow-stable. He suffered a good deal of pain, and I ordered hot fomentations with water previously boiled and linseed wool. The following day I met him on his wagon hauling stone. He said his thumb was now all right; the pain had stopped, the swelling having gone down after several hours of poulticing, as directed. The next day I met him again accidentally; he had his thumb clumsily tied up. On questioning him about this he said he had applied cow-manure, as a gathering had formed on the back of the thumb which had broken and discharged a little pus. I called his attention to the filthiness and danger of using cow-manure, urging him to remove it at once and to cleanse his hand thoroughly with warm water and soap. The following evening, June 17th, he came to my office complaining of pain in his chest and difficulty of breathing, which he attributed to some indiscretion in diet and "catching cold." I gave him a hypodermatic injection of a sixth of a grain of morphin sulphate and sent him home. At twelve o'clock the

same night I was called to see him again. He had received no benefit from the injection; well-marked symptoms of tetanus—tonic spasms of the muscles of the trunk, trismus, and opisthotonos—were beginning to develop. The temperature was normal, the pulse 80. The next morning his temperature and pulse-rate were the same. The pains and spasms increased, and he said he thought he was "foundered." I called in Dr. Whyte, of this place, and we saw in our patient a classic picture of tetanus, hourly growing worse in spite of the usual antispasmodic treatment. On the morning of June 18th his pulse was 90, the temperature 101.5° F. A few hours later, the last time I saw him alive, his temperature had risen to 105°, and he died at about one o'clock in the afternoon from hyperpyrexia. The temperature of his body was 110° F. a half-hour after death. His mind remained clear to the last. The period of incubation in tetanus varying from a few hours to two weeks, the question now presents itself: Did infection with the bacillus tetani take place when the thumb was struck with the hammer, or was it due to the application of cow-manure? Punctured wounds of the foot from stepping upon rusty nails are often treated by the ignorant with that home remedy of great repute—cow-dung.

Carl R. Feld.
Watertown, Wisconsin.

NEWS ITEMS.

The National Association of Railway Surgeons will hold its seventh annual convention at Galveston, Texas, May 8, 9, 10, and 11, 1894. An interesting program has been arranged. The following papers will be read: "Conservatism in the Treatment of Compound Comminuted Fractures of the Leg," by Dr. George R. Dean, of Spartanburg, S. C.; "Compound Fractures," by Dr. Milton Jay, of Chicago; "Plaster-of-Paris Splints for Fractures Simple and Compound," by Dr. J. G. Buchanan, of Pittsburg; "Anesthesia (Local and General) and its Proper Production," by Dr. E. A. McGannon, of Brockville, Ont., Can.; "Fracture and Dislocation of the Spine," by Dr. Thomas H. Manley, of New York; "Diagnosis of Injuries of the Cord and its Envelops, with and without Fractures of the Spine," by Dr. C. H. Hughes, of St. Louis: "Treatment of Injuries of the Cord and its Envelops, with and without Fracture of the Spine," by Dr. W. B. Outten, of St. Louis; "Some of the Uses of Hot Water in Recent Injuries in Railway Surgery," by Dr. N. A. Drake, of Kansas City; "Minor Surgery," by Dr. J. D. Myers, of Huntington, W. Va.; "Color-blindness," by Dr. D. Emmett Welsh, of Grand Rapids, Mich.; "Exhibition of New Tests for Simulated Blindness in one Eye," by Dr. James L. Minor, of Memphis, Tenn.; "Evisceration *vs.* Enucleation, following Injuries of the Eye," by Dr. A. E. Prince, of Springfield, Ill.; "Rectal and Anal Surgery and its Relation to Railway Injuries," by Dr. S. G. Gant, of Kansas City, Mo.; "Should the National Association of Railway Surgeons become a Delegatory Body?" by Dr. R. Harvey Reed, of Columbus, Ohio; "Quarantine and its Relation to the Railway Surgeon and Railway Surgeons' Relation to Quarantine," by Dr. Van B. Thornton, of Hempstead, Texas; "Litigation-psychosis," by Dr. Matthew D. Field, of New York; "A Case that ought to have been one of Railway Spine, and its Treatment," by Dr. C. M. Woodward, of Tecumseh, Mich.; "A Novel Case of Cerebral Traumatism," by Dr. J. R. Barnett, of Neenah, Wis.; "A Case of Fracture of the Spine—Operation followed by Improvement," by Dr. John E. Sylvester, of McArthur, Ohio; "The Evolution of Railway Surgery," by Dr. E. R. Lewis, of Kansas City; "Dressing of the Stump in Amputation," by Dr. A. B. Brumbaugh, of Huntingdon, Pa.; "Railways and Railway Surgery," by Clark Bell, Esq., of New York; "Improved Railway Stretcher," by Dr. R. Ortega, of Ciudad Porfirio Diaz, Mex.; "Thiersch's Grafts in Extensive Destruction of Soft Parts about Large Joints," by Dr. Henry W. Coe, of Portland, Ore.; "A Digest of Four Hundred Consecutive Railway Cases," by Dr. Howard J. Williams, of Macon, Ga.; "Management of Burns and Scalds, with Cases," by Dr. C. K. Cole, of Helena, Mont.; "A Case of Spinal Injury with Rupture of the Intestine—Operation, Recovery," by Dr. I. N. Warren, of Sioux City, Iowa; "Concussion," by Dr. George W. Cox, of Brownsville, Ore.; "Shock—its Phenomenal Results," by Dr. Willis M. Wilson, of Curtis, Neb.; "Clinical Cases—Shock, Hemorrhage, Tendon Suture," by Dr. John Van Duyn, of Syracuse, N. Y.; "Treatment of Shock," by Dr. James H. Letcher, of Henderson, Ky.

The American Gynecological Society will hold its nineteenth annual meeting at Washington, D. C., on May 29, 30, and 31, 1894. The following is the program arranged: Discussion—"Extirpation of the Uterus in Disease of the Adnexa." Opened in the affirmative by Dr. J. M. Baldy, followed by Drs. Florian Krug and H. T. Hanks; in the negative by Dr. T. A. Reamy, followed by Dr. W. G. Wylie. Discussion—"The Management of Face-presentation." Opened by Dr. Edward R. Reynolds, followed by Drs. Charles Jewett, B. C. Hirst, C. P. Noble, and E. P. Davis. "The Abuse of Trachelorrhaphy," by Dr. William R. Pryor, of New York; "Fatal Nausea and Vomiting of Pregnancy," by Dr. Edward P. Davis, of Philadelphia; "Myomectomy as a Substitute for Hystero-myomectomy," by Dr. E. C. Dudley, of Chicago. President's Address—"The Proper Position of Recent Surgical Methods in the Treatment of Uterine Fibroids." General discussion invited. Discussion—"Rupture of the Uterus; Palliative *vs.* Surgical Treatment." Opened by Dr. Charles M. Green, followed by Drs. Malcolm McLean and H. C. Coe. "The Alexander Operation," by Dr. Clement Cleveland, of New York; "The Ultimate Results of the Treatment of Retro-displacement by Pessaries," by Dr. Francis H. Davenport, of Boston; "The Influence of Laceration of the Perineum on the Uterus, and the Operation for its Repair," by Dr. W. Gill Wylie, of New York; "Retroperitoneal and Intra-ligamentous Tumors of the Uterus and Adnexa," by Dr. William H. Wathen, of Louisville; "Inflammation of the Ureters from a Medical Standpoint," by Dr. Matthew D. Mann, of Buffalo; "The Influence of Minor Forms of Tubal and Ovarian Disease in the Causation of Sterility," by Dr. Thomas A. Ashby, of Baltimore; "The Results of Vaginal Fixation of the Stump in Abdominal Hysterectomy," by Dr. Henry T. Byford, of Chicago; "Symphysiotomy *vs.* the Induction of Premature Labor," by Dr. Charles P. Noble, of Philadelphia. In Memoriam—"Dr. Andrew Dunlap," by

Dr. John C. Reeve, of Dayton; in Memoriam—"Dr. John M. Keating," by Dr. Edward P. Davis, of Philadelphia. Subject, "The Conservative Surgery of the Female Pelvic Organs;" referee, Dr. William M. Polk, of New York; co-referee, Dr. William Goodell, of Philadelphia.

The American Dermatological Association will hold its eighteenth annual meeting at Washington, D. C., on May 29, 30, 31, and June 1, 1894. The following scientific program has been arranged:

Address by the President, Dr. R. B. Morison. "Thyroid Feeding in Diseases of the Skin," by Dr. G. T. Jackson. "The Rare Forms of Alopecia," by Dr. G. H. Fox. "A Case of Favus of the Head and Body," by Drs. J. A. Cantrell and E. J. Stout. Report of Committee on Statistics. "The Pathological Anatomy of Pearly Epithelioma of the Face," by Dr. J. A. Fordyce. "The Question of Contagiousness of Molluscum Contagiosum," by Dr. H. W. Stelwagon. "The Therapeutic Value of Urea in the Treatment of Skin-diseases," by Dr. C. W. Cutler. "Ichthyosis Congenita (so-called Harlequin Fetus); History of a Case still Living," by Dr. S. Sherwell. "The Distribution and Control of Leprosy in North America": First paper, "Distribution," by Dr. J. N. Hyde; discussion by Dr. J. E. Graham; second paper, "Diagnostic Features and Treatment," by Dr. P. A. Morrow; discussion by Dr. A. Van Harlingen; third paper, "Contagiousness, Prophylaxis, and Control," by Dr. J. C. White, discussion by Drs. G. H. Fox, J. D. Bryant, and Gen. W. C. Wyman, U. S. M. H. "Angioma Serpiginosum and some other rare Dermatoses," by Dr. J. C. White. "The Protozoa-like Bodies of Herpes Zoster; a Contribution to the Study of Psorospermosis," by Dr. M. B. Hartzell. "Cold as an Etiological Factor in Diseases of the Skin, with Report of Cases," by Dr. W. T. Corlett. "Acquired Idiosyncrasy for Quinin, showing Peculiar Cutaneous Manifestations," by Dr. C. W. Allen. Open discussion upon Dermatitis Exfoliativa: (*a*) Its clinical forms; (*b*) Its etiology; (*c*) Its treatment. Title to be announced, by Dr. E. B. Bronson. "The Relation of Impetigo Herpetiformis to Pemphigus Vegetans," by Dr. J. Zeisler. "Notes on Drug-eruptions," by Dr. J. A. Fordyce.

Obituary: Dr. Joseph Workman.—By the death of Dr. Workman, of Toronto, the profession of the neighboring Dominion has lost not only a prominent representative, but a striking and unusual character. He was born in Ireland in 1805, and after serving as a young man on the Ordnance Survey, emigrated to Montreal, where he studied medicine, graduating from McGill College in 1835. In 1836 he moved to Toronto, engaged in practice, and subsequently became Professor of Obstetrics in the Toronto School of Medicine. In 1853 he was appointed Superintendent of the Provincial Lunatic Asylum, a position which he held for twenty-six years. His chief contributions have been on the subject of insanity, and he was for many years a warm supporter of the *Utica Journal*. He was a familiar figure at the meetings of the Association of Asylum Superintendents in this country. Of late years he lived in retirement in Toronto, enjoying in an unusual degree the respect and esteem of his colleagues and citizens. His name has been familiar in the medical journals through translations from various European languages, and he did much to make the work of our Italian brethren, particularly in the department of nervous diseases, known in this country. One of the most accomplished linguists in our ranks, he was exceptionally well versed in the chief modern languages, and not alone in medical but in the general literature, particularly of Italy, Spain, and Scandinavia.

Until about a year ago, when he had a slight hemiplegic attack, he retained his mental and bodily energies in an exceptional degree, and took a deep interest in all matters relating to the welfare of the profession. His death took place on the 15th ult., after a brief illness.

The American Pediatric Society will hold its sixth annual meeting at Washington, D. C., May 29, 30, 31, and June 1, 1894. The following program has been arranged:

May 29th: Address by the First Vice-President, "A Eulogy on Drs. John M. Keating and Charles Warrington Earle," by F. Forchheimer, Cincinnati. "Eulogy on Dr. T. F. Sherman," by T. M. Rotch, Boston. "The Influence of the Blood-supply on the Irritability of the Spinal Motor Centers," by B. K. Rachford, Newport, Ky. "The Early Diagnosis of Pott's Disease of the Spine in Children," by Dillon Brown, New York City. "A Case," by William P. Northrup, New York City. "Tonsillotomy, followed by Diphtheria and 'Croup,'" by Augustus Caillé, New York City.

May 30th: Discussion on the Etiology and Prevention of Rickets: *a.* "Influence of Race (especially in Italians)," by Irving M. Snow, Buffalo. *b.* "Influence of Race (in Negroes)," by George N. Acker, Washington, D. C. "A Case of Congenital Rickets," by C. W. Townsend, Boston. "Infantile Scurvy, especially its Differential Diagnosis," by J. Henry Fruitnight, New York City. "An Aid to the Sterilization of Milk in Artificial Infant Feeding," by A. Seibert, New York City.

May 31st: "Report of the Committee on the Nomenclature of Diseases of the Gastro-enteric Tract," by T. M. Rotch, Chairman, Boston. "Report of the Committee on the Nomenclature of Diseases of the Mouth.

June 1st: "Acute Pyelitis in Infancy," by L. Emmett Holt, New York City. "Infantile Myxedema," by William P. Northrup, New York City. "The Hemorrhagic Diseases of the Newborn," by C. W. Townsend, Boston.

Dr. Wm. V. Keating died suddenly on April 18th in this city at the age of seventy-one years. He was graduated from the University of Pennsylvania in 1844, and in 1861 was elected Professor of Obstetrics in Jefferson Medical College, holding the latter position for but a short time. From 1862 to 1865 he was Medical Director of the United States Army Hospital at Broad and Cherry Streets. He was the Medical Director of St. Agnes', St. Mary's, and St. Joseph's Hospitals, and a member of numerous medical and scientific societies. He was the American editor of Ramsbotham's *Midwifery* and Churchhill's *Diseases of Women*.

The Wistar Institute of Anatomy of the University of Pennsylvania will be opened with appropriate ceremonies on May 22d, when an address will be delivered

by Dr. Wm. Osler, formerly Professor of Clinical Medicine in the University and now Chief of the Medical Department of Johns Hopkins University. Dr. Harrison Allen has been made Director of the Institute, and Dr. Milton J. Greenman, Assistant Director.

The Cleveland Medical Society will hold its second quarterly meeting on the evening of June 22d, on which occasion Dr. William Pepper will deliver an address. On the following morning Dr. Pepper will hold a clinic in one of the hospitals. Members of the medical profession generally are invited to be present.

The Nebraska State Medical Society will hold its twenty-sixth annual meeting at Lincoln, Neb., on May 1, 2, 3, 1894. An elaborate and attractive program has been arranged. Members of the medical profession are cordially invited to attend.

Medical College Consolidation.—The Cincinnati College of Medicine and Surgery has been affiliated with the University of Cincinnati, under the title of the Medical Department of the University of Cincinnati.

Medical Practitioners in Paris.—A recent enumeration shows that there are 2208 medical practitioners in the city of Paris, a proportion of 1 to about every 1000 inhabitants.

Pasteurism in Turkey.—It is announced that antirabic stations are to be established in various parts of Turkey. There is already such a station at Constantinople.

Prof. Rubner has been selected to succeed the late Prof. August Hirsch in the chair of the History of Medicine in the University of Berlin.

Raymond has been elected Professor Agrégé in the Paris Faculty of Medicine, and Physician to the Salpêtrière in succession to Charcot.

Dr. W. D. Miller has been elected Professor Extraordinary of Dentistry in the Medical Faculty of the University of Berlin.

Books and Pamphlets Received.

Injuries to the Eye and its Appendages. By Cassius D. Westcott, M.D. Reprinted from the Chicago Medical Review, 1893.

Removal of the Uterus and its Appendages for Pelvic Inflammatory Disease. By J. M. Baldy, M.D. Pamphlet. Read before the Obstetrical Society of Philadelphia, 1893.

Hysterectomy: Indications and Technique. By J. M. Baldy, M.D. Reprinted from the American Journal of Obstetrics and Diseases of Women and Children, vol. xxviii, No. 5.

Physiology Practicums. By B. G. Wilder, M.D., 1893.

Appendicitis: a Personal Experience. By Howard Crutcher, M.D. Reprinted from the Journal of Orificial Surgery, 1893.

A Consideration of the Cause of Typhoid Fever in Chicago. By O. N. Huff, M.D. Reprinted from the Chicago Medical Recorder, 1893.

Outline of Physical Diagnosis of the Thorax. By Arthur M. Corwin, A.M., M.D. Chicago: The W. T. Keener Co., 1893.

Suicide and Insanity. A Physiological and Sociological Study. By S. A. K. Strahan, M.D. London: Swan, Sonnenschein & Co., 1893.

Climates of the United States, in Colors. By Charles Denison, A.M., M.D. Chicago: The W. T. Keener Co., 1893.

The Diazo-reaction of Ehrlich. By Julius Friedenwald, A.B., M.D. Reprinted from the New York Medical Journal, 1893.

On the Treatment of Chlorosis. By F. Forchheimer, M.D. Reprinted from the Therapeutic Gazette, 1893.

The Intestinal Origin of Chlorosis. By F. Forchheimer, M.D. Reprinted from the American Journal of the Medical Sciences, 1893.

State Care for Epileptics. By J. B. Maxwell, M.D. Reprinted from the North American Practitioner, 1893.

Lectures on the Surgical Disorders of the Urinary Organs. By Reginald Harrison, F.R.C.S. Fourth edition, rewritten. London: J. & A. Churchill, 1893.

Transactions of the American Ophthalmological Society, Twenty-ninth Annual Meeting, New London, Conn., 1893. Hartford: Published by the Society, 1893.

The Treatment of Phthisis. By E. P. Hershey, C.E., M.D. Reprinted from the Medical Record, 1893.

The Treatment of Diphtheria. By F. E. Waxham, M.D. Reprinted from the Journal of the American Medical Association, 1893.

The Surgery of the Ureters: a Clinical, Literary, and Experimental Research. By Weller Van Hook, A.B., M.D. Reprinted from the Journal of the American Medical Association, 1893.

National Academy of Sciences. Vol. VI. Seventh Memoir. Human Bones of the Hemenway Collection in the United States Army Medical Museum. By Washington Matthews, M.D., J. L. Wortman, M.D., and J. S. Billings, M.D.

Treatment of Chronic Valvular Disease of the Heart. By James Tyson, M.D. Reprinted from the Therapeutic Gazette, 1893.

The Treatment of Gout. By James Tyson, M.D. Reprinted from the Therapeutic Gazette, 1893.

Diphtheria. By James Tyson, M.D. Pamphlet. Philadelphia, 1893.

The Retrospect of Medicine. A Half-yearly Journal. Edited by James Braithwaite, M.D. Lond. Vol. CVIII. July–December, 1893 (issued January, 1894). London: Simpkin, Marshall, Kent & Co., Limited. Edinburgh: Oliver & Boyd. Dublin: Hodges, Figgis & Co., and Fannin & Co. Leeds: W. Brierly.

A Text-book of the Physiological Chemistry of the Animal Body, including an Account of the Chemical Changes occurring in Disease. By Arthur Gamgee, M.D., F.R.S. Vol. II. The Physiological Chemistry of Digestion. London and New York: MacMillan & Co., 1893.

A Clinical Text-book of Medical Diagnosis for Physicians and Students, based on the Most Recent Methods of Examination. By Oswald Vierordt, M.D. Authorized Translation with Additions by Francis H. Stuart, A.M., M.D. Third revised edition. Philadelphia: W. B. Saunders, 1894.

Vital Statistics of the District of Columbia and Baltimore, Covering a Period of Six Years, ending May 31, 1890. By John S. Billings, M.D., Expert Special Agent. Washington, D. C.: Government Printing Office, 1893.

Twentieth Annual Report of the Maternity Hospital, Philadelphia, 1893. Philadelphia: Press of Patterson & White.

Sarcoma of the Skin of the Back in a Baby. By Walter Lester Carr, M.D. Reprinted from the Archives of Pediatrics, 1893

Medical Society of Franklin County: Its History, and Sketches of Early Practitioners of the County. By John Montgomery, M.D. Published by the Medical Society of Franklin County, Pa. Chambersburg: J. R. Kerr & Brother, Printers, 1892.

Olive Oil as a Remedy in the Treatment of Gastric Ulcer. By Emanuel J. Senn, M.D. Reprinted from the Chicago Clinical Review, 1894.

The Principal Meal, and Food-Values. By William Henry Porter, M.D. Reprinted from the American Medico-Surgical Bulletin, 1893.

Anesthetics. A Series of Clinical Lectures. By William Henry Porter, M.D. Reprinted from the American Medico-Surgical Bulletin, 1893,

Rheumatism. By William Henry Porter, M.D. Reprinted from "Merck's Bulletin," 1893.

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ORIGINAL ARTICLES.

A SERIOUS FALLACY ATTENDING THE EMPLOYMENT OF CERTAIN DELICATE TESTS FOR THE DETECTION OF SERUM-ALBUMIN IN THE URINE, ESPECIALLY THE TRICHLORACETIC ACID TEST.[1]

BY D. D. STEWART, M.D.,
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THERE is no point in medicine about which there is more universal disagreement and misapprehension than that relating to the absolute and relative value of recently introduced delicate tests for albumin in the urine. Certain it is that in the hands of any save those fully conscious of the many fallacies attending the use of these tests, and with disbelief in the existence of a normal albumina minima, it is far better to depend upon the less misleading, if also less delicate, and more practical time-honored methods—those by boiling[2] and by the use of nitric acid. Although certain complications attend the use of these, they are more easily overcome and are less likely to mislead than those surrounding such tests as trichloracetic acid, the reagents of Tanret, Sebelein, and Millard, glacial phosphoric and picric acids. Sources of error are so numerous with most of the latter tests that our best urinologists strongly question their practical clinical utility. Saundby, for instance, remarks[3] that "there are albuminoid bodies in the urine that have no known clinical significance, and these can only embarrass the practitioner who finds them when he is looking for a sign to which he attributes a significance based upon purely empirical foundation." Saundby discards all tests save that by boiling with a drop or two of dilute acetic acid. Many others, among whom is our own distinguished Tyson, hold very similar opinions, and view with small favor the substitution for the heat and the nitric-acid tests the more recent aspirants for favor. The many fallacies attending a reaction from these delicate tests are sufficiently dwelt upon in systematic treatises on urine-testing: for example, the presence in the urine of albumoses, peptone, drugs previously ingested, such as an alkaloid or a coal-tar derivative, an excess of urates and the like—all may at times confuse.

One source of error but little noticed, to which I wish now to direct especial attention, is that relating to the presence in normal urine of an albuminous body or bodies allied to serum-albumin, the so-called nucleo-albumin, the precise chemic nature of which is unfortunately little understood. Much that has been written in the past regarding the presence normally of traces of serum-albumin in the urine, as ascertained by the employment of most refined tests for its detection, is valueless, because of disregard of the fact of the existence of this substance in most urines in amount sufficient to respond to most of the delicate tests used for serum-albumin, and from which the reactions could not be distinguished. Such observers were either unaware of or disregarded the fact that nucleo-albumin[1] derived from the extra-renal urinary passages might readily have caused the response to the tests employed for the detection of traces of serum-albumin.[2] This substance is normally present in the urine of all in varying amount. The quantity, which is usually infinitesimal, though generally sufficient to react without concentration of urine to certain tests used for the detection of serum-albumin—notably such as the trichloracetic acid, the reagents of Tanret, and also Sebelein—may increase in conditions of irritation of the urinary passages induced by muscular exercise, or by the presence of a urine too acid and irritating (concentrated) to an amount to cause even doubt as to its differentiation by Heller's nitric-acid-contact method, a test regarded as a very certain one for the detection of serum-albumin.[3]

[1] Read as part of a discussion before the Society for Clinical Research, March 27, 1894.

[2] Applied to the upper stratum of clear acid urine in a test-tube, to be viewed with a light from above and a dark background for comparison with the unboiled stratum.

[3] Bright's Disease, p. 125. Bristol, 1889.

[1] There seems doubt whether or not urinary nucleo-albumin is a single body and identical with mucin. At all events it possesses a remarkable similarity to the nucleo-albumin of the bile, the basis of biliary mucin. Neubauer and Vogel fully discuss these points in their splendid work on the urine.

[2] Posner's researches as to a physiologic albuminuria are faulty in this particular, as are those of Capitan, Chateaubourg, and several others.

[3] Reissner, by estimation, found urinary mucin present to an amount varying from 0.05 to 0.1 per cent., and v. Noorden noted as much as 0.6 grm. to a liter of normal urine. (See Neubauer and Vogel, Wiesbaden, 1890.) Kirk, in a most admirable paper on "Urine-testing for Mucin" (*Lancet*, April 26 and May 3, 1890), gives instructive data as to the differentiation of mucin from serum-albumin. Kirk regards urinary mucin as a substance occupying an intermediate place between other forms of mucin and albumin. The first-mentioned authorities, than which there

In the thoroughly healthy, with urine normal as regards nitrogenous ingredients and free from ordinary indications of catarrhal conditions of the urinary passages, it is not unusual to obtain a trace of response from contact for from a few moments to a half-hour with a cold picric-acid solution, and I have found it common to obtain an almost instantaneous fine white ring by the other tests mentioned, the trichloracetic acid and that of Sebelein especially, but also by that of Tanret, and, less often, by that of Millard. Glacial phosphoric acid also reacts after from three to five minutes' contact. The presence of mucin in these same urines, if they be not too rich in salts,[1] may often be readily shown by the use of acetic acid as a precipitant. My own urine almost habitually responds to several of these very delicate tests, such as trichloracetic acid, to the reagents of Tanret and of Sebelein, and often to picric acid and to Millard's reagent, though it is absolutely normal as regards urea and freedom from casts. This response is probably due to the presence of mucin, perhaps derived from the bladder, which has a tendency toward irritability. I have often treated specimens with acetic acid after the manner detailed in the papers on "Non-albuminuric Nephritis," and have then always failed to obtain response with the treated specimen on subsequent testing with picric-acid. The test of Tanret, and the trichloracetic acid test, then, also, occasionally tried for experiment, would still not unfrequently give a response, but not to any extent the sharp reaction previously obtained.

I have in the past so repeatedly obtained a reaction to these tests in urines which I had with good reason regarded as normal that I long ago ceased to place any confidence in a positive response unless first, among other sources of error, the presence of this urinary mucin could be excluded. Unfortunately, this is impossible as regards several, and especially that of trichloracetic acid, that now most in vogue as a delicate test for albumin.[2] This acid, from its possessing properties similar to acetic acid, of which it is a substitution-derivative, I have become convinced is an absolutely uncertain and even dangerous reagent in this particular, so likely is it to mislead. As is well known to those accustomed to urinary analysis, it is an impossibility to separate traces of a mucinous substance from the urine even by the use of acetic acid with prolonged contact, though the latter be added in sufficient amount to overcome the neutralizing effects of the urinary salts;[1] and even should all be precipitated by long contact, which is doubtful, if it be present in any amount, as is so common with specimens of the diurnal urine, its complete separation on the filter is impossible. Insoluble substances, such as chalk, magnesia, barium sulphate, added to assist its precipitation, will also carry down traces of serum-albumin if naturally present or artificially added. I have, however, found again and again that with urines which I was convinced contained no serum-albumin, but which responded to picric acid and more markedly to the trichloracetic-acid contact-test, sufficient mucin could be removed with acetic acid to prevent further trace of response to the former, but not to the latter.

It is for these reasons that, though I have for the past eight years employed the unacidulated picric-acid test as a routine method, first overlaying the suspected urine with it before proceeding to the application of the heat or of other tests, I have placed far more confidence in a negative than in a positive result obtained by it. A reaction not occurring within a few moments, the employment of other tests was, naturally, regarded as unnecessary. A slight response appearing within this time, and not attributable to the other sources of error before mentioned, I had, until recently, attributed to traces of serum-albumin, and was inclined to believe in the existence of a normal slight albuminuria. More lately, however, experiments have convinced me that this response is due to the presence in the urine of a mucinous body.

To ascertain the frequency of reaction to the more delicate tests for albumin, of urines from normal individuals, those so far as was known that were without indications of renal disease, I recently examined specimens from 105 young men, all of whom save one regarded themselves in good health at the time, and but three of whom were known to be taking drugs of any sort. It was certain that none was a gonorrheal subject. The

are no more exact, do not look upon this body as true mucin, but call it nucleo-albumin, or *mucinähnliche Substanz*, as do, indeed, also Hammersten (Physiological Chemistry) and others of our best authorities.

[1] The urinary salts maintain mucin in solution. Concentrated urines, *i. e.*, those rich in salts, will not yield mucin to a small amount of acid, save by special treatment. In diluted or in dialyzed urines, or in those naturally poor in saline ingredients, the presence of mucin may be usually detected by the addition of a small amount of dilute acetic acid, and allowing to stand, care being taken not to add too much after dialysis. Some urines, from presumably normal individuals, cloud markedly almost instantly on the addition of an excess of the acid.

[2] Other of the delicate tests, such as those of Tanret, Sebelein, etc., containing free acetic acid, and also a mercurial salt, or tannin, are also unreliable, from their readiness to respond to traces of mucin, not at all in the dusty contact-haze that many advocating the use of these tests teach, but often as a sharply-defined ring, the appearance of which cannot be distinguished from serum-albumin. The best of the refined tests are the plain saturated solution of picric acid and Millard's solution. Although acetic acid enters into the composition of the latter, it is partly as an acetate, the action of which, as a precipitant of mucin, is slight. Yet this solution, too, reacts with mucin, as its originator acknowledged.

[1] One-tenth bulk of glacial, or its proportion of 25 per cent. acid.

specimens were collected for me by my friend Dr. Wolff, in the course of laboratory instruction, and in a manner that admitted of no deception being practised by the donors. The urethra was first flushed with urine which was discarded, so that mucus from this situation might be excluded.

The specimens were divided into two sets, one of 52, the other of 53. All of the 105 urines were those of the day. All save three of the first series were voided about three hours after breakfast, and as with the second series, which specimens were passed about four hours succeeding dinner, after the donors had been standing at laboratory work at least three-quarters of an hour. All of these specimens, therefore, represented the diurnal urine and food urine, in which the erect posture and evidences of muscular fatigue would aggravate an albuminuria if already present, and would likewise tend to induce an increase of mucinous substance in the urine such as would be similarly present in a mixed twenty-four-hour specimen from the same individuals.[1]

In the first series (52) three of the commonly-used delicate tests were employed—saturated solution of plain picric acid, trichloracetic acid, and glacial (meta)phosphoric acid.[2] In the second series (53), trichloracetic acid was the only one of the three tests employed.

For convenience, positive or negative response to the tests employed was noted at the end of three periods, and marked as occurring within these: ten seconds (which in the application of the contact-tests by picric acid and by trichloracetic acid was practically instantaneous), one minute, and five minutes.

In the first series the trichloracetic acid used was a specimen of Merck's C. P.,[3] which, originally crystalline, had liquefied after nearly two years' standing on the laboratory shelf, through the slow absorption of moisture from the air, the glass stopper of the bottle not having hermetically closed the neck. No water whatever had been added. The specimen, therefore, represented a highly-concentrated solution. I had previously found that the delicacy of reaction to the acid depended very greatly upon the degree of concentration of the solution. A solution which at one time I regarded as quite saturated, to which water had been added and no heat employed to insure solution, was noticed to react with no more delicacy than did Millard's solution or metaphosphoric acid. This fact is of importance, and probably explains the variation in result obtained by different experimenters with the acid.

In the second set of examinations, a freshly-obtained specimen[1] (labelled Kahlbaum, Berlin) of the crystalline acid was used, which was first liquefied in a water-bath and fluidity maintained by the addition of a small quantity of a concentrated, but not completely saturated, solution of the acid (Merck's C. P.). There was only sufficient of the first solution remaining for one comparative test with the last. By it the latter solution was found to not quite equal the former in delicacy of response, the reaction appearing somewhat later, and being less decided.

An unacidulated, saturated solution of picric acid was used. This and the trichloracetic acid were applied by the contact-method, viewed with a dark background by a light from above. The technique in examinations of this sort is of the greatest importance. It should be stated that as a background a piece of black cloth was always used. Most of the examinations were made at night, by aid of gaslight. When by day, illumination by sunlight was, of course, avoided. Inclination of the *upper part* of the tube toward one, with proper shading often demonstrated with the trichloracetic acid, a sharp, white, undoubted, though fine ring, that otherwise would have been overlooked in the contact-time mentioned. Tubes of three-eighths-inch diameter were used in applying the trichloracetic acid, the cost of the acid not permitting too large a quantity to be employed in each test. The urine was first added to the tube, and the acid subsequently deposited at the bottom with a pipet drawn out to a very capillary extremity.

In testing with picric acid the urine was overlaid. With the metaphosphoric acid, a small, thoroughly clean and clear portion of a cylinder was dropped into the urine, and the time of development of the slightest cloud about it noted within the time-limits stated. All the specimens tested were undecomposed. A small quantity of dilute acetic acid was added to all that were not decidedly acid. Any specimens that were at all cloudy were filtered.[2] With but three exceptions all of the 105

[1] This was not intentional. Morning specimens would have been preferred if obtainable without chance of deception. It is, however, of value, for the reasons stated.

[2] Picric acid was chosen as the test I most frequently employ; trichloracetic acid as one now coming much into vogue, and with which I had been disappointed in the past, as with Tanret's and Sebelein's reagents, from the too extreme delicacy misleading, as already stated. Millard's was not now employed, as I was satisfied from some comparative tests with it in the past that it corresponded very nearly in point of delicacy and exactness with picric acid. Tanret's solution was not used, as experiments had shown that it is a less delicate reagent for the detection of mucin or serum-albumin than trichloracetic acid. Metaphosphoric acid was used, as doubt existed as to its relative delicacy with the others employed.

[3] Given me by Dr. Leffmann. He had opened the bottle occasionally to remove a few crystals, using them and not a solution in his testing with it.

[1] From the Chemical Laboratory of the Jefferson Medical College, through Dr. Lawrence Wolff.

[2] Swedish filtering-paper was used. This is important, as the

specimens gave an undoubted response[1] to the trichloracetic-acid solutions, prepared as indicated, in the shape of a contact-ring within the five-minute limit. This reaction varied from a very narrow, always white, ring in the least marked to one of many lines in thickness in the most decided. Fifty-nine responded within ten seconds; of these, 22 reacted very markedly instantaneously;[2] 10 others by a sharp, though very thin white ring, becoming, as with nearly all, broader with longer contact. The remainder of the 59 reacted at first slightly, though undoubtedly the line became sharper with from one to five minutes' contact; 34 of the remaining responded within one minute, and of these, 13 only reacted slightly within the minute, becoming, however, except in two instances, more marked at the expiration of five minutes. Nine only of the 102 reacting showed no response at the end of a minute, the precipitate forming within the five-minute limit.

The three that gave no response save a trace of haze within the five minutes—the only ones of the 105 that did not unquestionably react—showed a pronounced contact-cloud of from three to four lines in depth within a few seconds after placing the tubes in hot water. The influence of heat, applied in all instances and most satisfactorily by placing the tube in a vessel containing water at the boiling-point, was found without exception to render the previously-obtained reaction more decided, developing in certain of them a contact-cloud instantly, which was almost a minute in appearing in a second tube not subjected to heat. So that trichloracetic acid seems a test the delicacy of which is even intensified by the application of heat.

With picric acid, 41 of the 52 tested responded within five minutes; 16 reacted within ten seconds; 7 of these 16 responded very markedly instantly (these were all albuminous). Four others of the 16 gave a sharp, but very narrow ring. The reaction in the remainder of the 16 (5) was a mere contact-haze, which in 3 deepened into a sharply-defined, though narrow ring, within one minute, the remaining 2 within five minutes. Thirteen of the 52 that did not respond in ten seconds reacted within the minute; of which 13, 2 showed a hazy contact-ring only, not increasing at the expiration of five minutes. Six others displayed a fine, sharply defined, though not broad ring, which had considerably increased at the expiration of five minutes. In the remainder of these the ring was better defined, though not broad. Of the 23 remaining of the 52 which gave no response at the end of one minute, 11 showed no trace of haze within five minutes, while the 12 reacted within this time. In 6 of these 12 the reaction amounted to a haze only; the remaining 6 gave a sharply-defined though narrow ring. Of the 11 giving no reaction to picric acid at the end of five minutes, all gave a precipitate, as has been stated, with trichloracetic acid—5 within one minute, 4 within five minutes, the remainder within ten seconds. In this same 11, metaphosphoric acid gave absolutely no reaction in 6; in the others, the response with the glacial acid was very slight or questionable (at five-minute contact).

With metaphosphoric acid, 10 of the 52 tested failed to show signs of cloud in five minutes, and 36 in one minute; 4 only responded at the end of a few seconds, and these were of those showing albumin by nitric acid. Twelve reacted within one minute that did not within ten seconds; of these, 7 responded very slightly and 5 markedly. Of the 5, 2 gave the HNO_3 contact-reaction. Ten of the 36 that failed to show a haze within one minute also gave no response within the five minutes. Of the remaining 26, 23 had reacted slightly at the end of five minutes; the other 3 had responded markedly.

The influence of heat on the reaction obtained with trichloracetic acid and with picric acid, applied in all cases after the occurrence of the response noted, showed that the precipitate was not due to urates or to a proteose or peptone. In several of these urines, other than those responding to coarser tests, there was a decided mucous precipitate, though the urines filtered perfectly clear. The action of acetic acid was tried on only one of these—this specimen was voided about four hours after dinner by a man with whom I am thrown much in contact and whom I know to be in the best of physical condition. This urine gave a slight ten-second response to trichloracetic acid: at the end of one minute the faint, white ring had become decided. A haze was shown in ten seconds' contact with picric acid. This, at the end of a minute, had also become a sharp ring. With metaphosphoric acid the reaction was but slight at the end of five minutes. With the nitric acid contact-test, at a distance of about four lines above the meeting-line of acid and urine, there occurred a cloud three or four

French gray paper contains, and will yield to the filtrate, sufficient vegetable albumin to cause response to the finer tests, as Millard pointed out.

[1] As regards comparative time of response, it is interesting that with the first series (of 52) the reaction appeared within ten seconds in 41, of which 6 were markedly serum-albuminous; while in the second set tested (53), with a different solution of trichloracetic acid, as already detailed, but 18 reacted within the ten seconds, of which 14 were also markedly albuminous. Of the first series, 2 only of the 52 failed to respond within the one-minute limit. These 2, however, reacted within the five minutes. Of course, this wide dissimilarity in time of reaction may be due to differences in the character of the urines, instead of in the degree of concentration of the two test-solutions.

[2] In 20 of these the reaction was so instantaneous and very decided as to leave no doubt as to the presence of serum-albumin in some amount, afterward confirmed by other tests.

lines in depth, unaffected by heat.[1] At the junction of the two fluids a marked chromogen ring was so decided as to obscure any slight reaction which might then be produced by traces of albumin; 5 c.c. of 25 per cent. glacial acetic acid added to 15 c.c. of this cold urine filtered, which was perfectly free from a trace of cloud, gave after standing a few moments a very marked smoky haze, unaffected by gentle heat, indicating a decidedly mucinous condition of the urine. It was impossible to separate by repeated filtration this precipitate, so that no further tests were proceeded with.

Though this interrogation was not undertaken for the purpose of ascertaining the frequency of occurrence of so-called "physiologic" albuminuria, it is of interest here to note that of 105 urines from adolescents and young men, all save one of whom regarded themselves as in very good health, 20 (19 per cent.) gave an undoubted serum-albumin reaction to nitric acid by the contact-method. The percentage of albumin in these urines, subsequently estimated by Esbach's method in nearly all, lay from one-fourth to one and one-fifth grams to the liter. I have carefully examined, physically,[2] all save one of the 20. No one of the 19 show evidences of renal disease. In nearly all the albuminuria is intermittent, and is probably the result of circulatory disturbances, due to the erect posture and a weak heart. In these albumin is absent from the urine on rising, but present in that after exercise during the day; and pulse-tension, ascertained by the sphygmograph as well as by the finger, is low, in several markedly so.

Excluding these cases of undoubted albuminuria, the results obtained indicate with little question either that, normally, urine contains traces of serum-albumin, or, more probably, that the response to trichloracetic acid and that occurring less frequently to picric and metaphosphoric acid was due to the presence of a body of nucleo-albuminous (or mucinous) character of extra-renal origin. The results obtained with these 83 urines reacting to trichloracetic acid and not to the coarse tests[3] were so constant and agree so perfectly with those I had obtained in prior examinations of urine from those with presumably healthy kidneys that I have no doubt as to the validity of this inference.

To my mind these results show conclusively that as a practicable *delicate* test[1] for albumin, the much vaunted trichloracetic acid is of little value. Responding as it does so universally, its utility is much less than that of metaphosphoric and especially that of picric acid, the last of which not only furnishes useful negative information, but also, from its less refined delicacy, positive results of value, excluding reactions to a few drugs when present in the urine,[2] a precipitate from urates, the proteoses or peptone,[3] and mucin or allied bodies, all readily differentiated, except the latter if in excess.[4]

With trichloracetic acid, unless the response be frank and outspoken—*i. e.*, unquestionable to tests less delicate but reliable, such as ebullition with the addition of a few drops of dilute acetic acid, than which there is none less likely to err; those tests, in other words, that do not so readily react to urinary mucin—the nature of the result must remain in doubt and cannot be utilized to account for the symptoms if nephritis be suspected, as it is, perhaps, more than likely not due to serum-albumin.

From the results here obtained and from those I have before published, with those of many other observers, notably Kirk, and those who preceded

[1] This reaction, so often met with in both albuminous and non-albuminous urines, has been shown by Kirk to be due to mucin (*Lancet*, May 3, 1890), as was first suggested by Roberts (*Medical Chronicle*, October, 1884, p. 1.)

[2] Time has not yet permitted microscopic examination of more than two of these urines. One of these men has a weak heart; he is an overtrained athlete. A second has a mitral systolic, and a third an aortic diastolic murmur. In neither of these two, however, are there other indications of back-working apparent. Compensation seems perfect.

[3] The contact nitric-acid test, supplemented by heat, was made with all urines responding in a suspiciously decided manner to trichloracetic acid.

[1] In a note concerning the test, by Reese of Johns Hopkins Hospital (*J. H. H. Bulletin*, February, 1890), it was regarded as one worthy of extended use in clinical work, because of its utility and delicacy. It was narrated that many cases had been encountered the urine of which responded to it (used in saturated solution), and not to control-tests, such as picric acid—that frequent source of error, urinary mucin, or an extra-renal albuminous body, not being regarded in question. In a number of these cases (eleven) granular, epithelial, and hyaline casts were found in the urine, and a subsequent necropsy showed distinct changes in the kidneys. This is of especial interest to me, indicating as it does the frequency of non-albuminuric nephritis; for in this category these cases must certainly be placed. The so-general response of the urine of the healthy to this test, and often to picric acid as I have shown, indicates beyond doubt in my mind that in the cases referred to by Dr. Reese, the trichloracetic-acid reaction was but a coincidence, obtainable markedly in as many consecutive healthy subjects.

[Since writing the foregoing I have learned that trichloracetic acid has ceased to be regarded with its former favor in this hospital, especially by Prof. Kelly, for the reason stated—its impracticable delicacy. Prof. Osler has recently written me that he is "rapidly coming to the conclusion that about one-half of the chronic degenerative changes in the kidneys are unaccompanied by albumin in the urine. The word comes over so constantly from the laboratory '*degenerative changes in the kidneys*' in patients whose urine showed no especial alterations." Prof. Osler has begun to think that "there are no normal kidneys in hospital patients above forty years of age."]

[2] Which, if in no other way, may be obviated by the withdrawal of medicines for the time.

[3] None of which is often obtained, but all of which may be recognized by placing the tube for a short time in hot water, the heat of which will immediately greatly diminish or dissipate the response.

[4] By removal with acetic acid in the manner I shall detail in a future communication.

him on similar lines, but who, unlike him, regarded the frequency of response in the healthy to refined tests as indicative of a normal, constant albumina minima, it may be finally concluded that the recognition by such reagents as trichloracetic acid of mere traces in the urine of what the most skeptical regard as albumin, even with symptoms suggestive of renal disturbance, can have little significance, because of the very general frequency of reaction of urines of normal individuals to the same test. If this reaction be due to serum-albumin, its significance is actually *nil*, as it would follow that a normal, slight albuminuria is common. It is, however, more probably, in the vast majority of instances, due to the presence of an albuminuous body of extra-renal origin, a nucleo-albumin, or so-called mucin. In certain other cases—pathologic subjects, with symptoms indicative of a type of chronic nephritis, in which serum-albumin, as ascertained by more reliable tests, is persistently absent from the urine—it may, and probably does, also arise from the epithelium of the tubules of the kidney,[1] due to a faulty metamorphosis of the same producing a renal mucinuria.[2] Its recognition in the latter, in which, for purposes of diagnosis, its differentiation from serum-albumin would be unnecessary, if further differentiation from the common extra-renal mucinuria could be arrived at, as by obtaining urine directly from ureter or kidney, would be of the highest value. But as the latter is a clinical impossibility, we must fall back upon our only actual reliable aids in the diagnosis of such renal suspects—the microscope and the ureometer—the examination of the measured twenty-four-hour urine for urea and its sediment for casts.

I am greatly indebted to Dr. L. Wolff, and his assistants Drs. Jacob and Strecker, for the trouble taken in obtaining the series of specimens of students' urine for examination; and to Professor H. Leffmann and Dr. G. P. Thomas, for great assistance in the examinations. In all the specimens examined, save some six, all reactions that appeared were carefully noted and timed by one of the latter of these, as well as by myself.

2620 NORTH FIFTH STREET.

The Medico-Legal Society of New York will hold its May meeting at the Academy of Medicine on the 9th of May, 1894, at 8 P. M. The following papers will be read: "Medical Witnesses," by H. W. Mitchell, M.D.; "Railways and Railway Surgeons," by Clark Bell, Esq. The meetings are open to all persons interested in the science.

[1] See remarks as to the presence of renal mucin in the urine in such cases, in the two papers on non-albuminuric nephritis, in the *Amer. Journ. Med. Sciences*, December, 1893, and THE MEDICAL NEWS, April 14, 1894.

[2] Associated usually with a cylindruria.

THE ELEMENT OF MALIGNANCY IN TUMORS.[1]

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THE cause or causes giving rise to the element recognized as "malignancy" in tumors has so far been only a bone of contention among pathologists and surgeons, without their ever having been able to present any distinct reason or theory which could seem to merit the general approval of able observers. Probably that view advanced by Cohnheim, namely, the factor of "reduced physiologic resistance" has met with a more hearty acceptance than have any of the so-called "blood-theories" that preceded it, and, so far as I am aware, it is the first so-called local explanation for malignancy that has been put forth.

The theories to be presented in this paper are partly a rearrangement of already existing views and partly the suggestion of some new ideas, so far as I am aware, now brought forward for the first time. Prior to the subject proper, there are some views to be considered that have been generally accepted as facts: 1. Tumors consisting of embryonic tissue afford in the highest degree the best example of malignancy. 2. The more purely cellular the tumor, the richer in bloodvessels and the less developed their coats, the more rapid its spread and the earlier and more certain its generalization. 3. The more nearly that a tumor represents adult histologic elements, the less the degree of malignancy, *e. g.*, the spindle-celled sarcomata are less malignant than the round-celled variety. 4. That there are marked blood-changes not in accordance with the local or general disturbance produced by the development of a neoplasm, cachexia and anemia occurring without ulceration or pain, and many times not at all in proportion to the mildness of these symptoms.

From the existing knowledge of embryonic tissue, it is to be presumed that it can be produced and its growth will be more rapid when the nutrition is lower than that required by adult tissues; it is also known that its growth is far more rapid in the embryo prior to that stage in embryonic life in which specialization of tissue occurs. There are many reasons for inferring that embryonic tissue does not require for its growth a nutritive value so high as do the adult tissues. It is a well-known fact that fractures in patients the subjects of cachexiæ producing alterations in the nutritive value of their blood are abundantly surrounded by a growth of embryonic tissue, while the organization of the new or inflammatory products does not take place,

[1] Read before the Philadelphia Pathological Society, January 15, 1894.

and hence the fractures do not unite with usual promptness. This condition occurs not only in subjects that are the bearers of malignant tumors, but in general blood-diseases, and more especially in those in whom the tendency is toward the lowering of the bodily nutrition. In long-standing suppuration, when the general body-nutrition is bad and adult tissue wasting, how often do we find the embryonic tissue growing exuberantly? So much is this tendency respected that surgeons often decline to operate when the cachexia is well marked. If then, we admit that embryonic tissue can and does reproduce itself when adult tissues cannot retain their vitality, then it remains to be supposed that the embryonic growth or neoplasm removes from the blood nutritive elements not yet elaborated for the adult tissues, and thus saps them of their nutrition prior to its full development. That such elements exist in the blood cannot be doubted if we believe that the bone-marrow, the lymphatic glands, and the spleen have anything to do with the elaboration of the blood.

The second fact with regard to the cellular elements of a tumor is partly defined in the preceding remarks upon the growth of embryonic tissue; but I do not think that sufficient attention has been given to the condition of the bloodvessels in new growths. In the malignant tumors, at least, these are almost devoid of walls, so much so that in some of the rapidly growing sarcomata they are no longer blood-vessels but are cavernous sluice-ways, irregular in their conformation and anastomosing at every point without the formality of contracting their caliber to anything like what might be called a capillary. These large blood-ways are not endowed with any contractility, and no vasomotor system is to be demonstrated either histologically or clinically; hence their caliber cannot be affected, and the quantity of blood which is supplied to a neoplasm of this class is always the same and not altered by the nervous modifications which are applied to the adult tissues. We should also remember that no part of the nutritive material utilized in the growth of neoplasms is for the production of force; neoplasms have no function, no conversion of food into energy is required, and hence the entire pabulum supplied is converted into cellular growth. In glands a certain amount of the food utilized is represented by secretion, but in glandular carcinomata there is no secretion.

With regard to the third point referred to, namely, that the more nearly a malignant growth represents an adult element, the less malignant it becomes, again bears out the blood-theory of its nutrition. It has now reached a point that its growth calls for the same degree of nutritive value that the adult tissue does, and when it can grow the adult tissue can survive; and often when such a tumor, a sarcoma of course, is found to suddenly spring into activity, upon removal it will be demonstrated that it has reverted from a large spindle-celled to a small spindle-celled, or even to a round-celled growth, and with this will be found the beginning emaciation already referred to. This sudden conversion of a spindle-celled tumor, growing slowly, into a round-celled tissue growing rapidly, I have seen demonstrated again and again, and at each change in cellular elements the general health showed the change after a very short interval. If a simple adult-tissue tumor becomes an embryonic-tissue neoplasm we have all noticed how rapidly cachexia follows, and we have also noticed how slowly cachexia comes on in the simple adult neoplasms, in which it is rare and occurs not from the growth itself, but as a rule from interference with other tissues and their function.

As to the last point in the consideration of this view of the malignancy of neoplasms, namely, the change in the blood itself, there are many elements that have not been duly considered. With the exception of a few Continental observers there have been few observations recorded upon the blood of patients suffering from malignant neoplasms. Freund, of Vienna, asserts that in carcinoma the blood contains sugar, and in sarcoma no sugar, but only peptone—a view confirmed by Andrews. Upon this I have not been able to make any observation, but after numerous observations upon cases of malignant neoplasms I can assert that the red and colorless blood-corpuscles are diminished and the coloring-matter reduced, in many cases lower even than in many of the marked cases of anemia. I recall one case occurring in the practice of Dr. Hearn, of this city, in which an enormous round-celled sarcoma of the breast, of rapid growth, not associated with any ulceration or pain, but only with the discomfort of its weight, had emaciated the woman to almost a skeleton. The tumor was removed at the request of the patient, and before she left the hospital she had gained considerably in weight, in the face of so severe an operative procedure. This gain continued until recurrence became well marked; then retrograde change evinced itself, and rapid emaciation again followed; a second operation was followed by a second improvement in the general nutrition, and once more a second recurrence was followed by as rapid a decline in the bodily nutrition. This fact of general improvement after operations in the most grave cases in which any operative interference seems debatable, may be well advanced for palliative operations, and the improvement seems to show that the removal of the growth at once modifies the general blood-condition, and the resulting improve-

ment of the bodily nutrition bears out the theory already advanced. Given a patient with a malignant tumor of even short duration, and tell twenty surgeons who have experience with tumors that it is a tumor, and they will from the face diagnosticate that it is malignant without seeing it, and many of them will venture its classification from the general appearances. I would again assert that these cachexiæ are often entirely out of proportion to the general symptoms and lesions which are found, and, contrary to much of the teaching are not, in many cases at least, associated with either pain, ulceration, or visceral metastasis. Besides, who has not seen a woman going about and looking well upon whose leg there was a chronic ulcer, probably attended with varicose veins, the suppurating surface two or three times as large as the area of ulceration of almost any carcinoma of the breast and productive of many times the degree of suffering. The cachexiæ of malignant tumors are not as a rule due to, although they may be intensified by, hemorrhage, pain, mechanical effects (*e. g.*, pressure, weight, etc.), and visceral metastasis, which but represents a new center of growth, and aids in sapping the system. Again, if the tumor required the same quality of pabulum as the adult tissue, why should it not waste when the adult tissues waste? Unless it be from some of the reasons already cited, the cause is yet to be sought.

THE ETIOLOGY, PATHOLOGY, AND TREATMENT OF OZENA.

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The term ozena is a most unfortunate one, for the condition is not a disease *per se*, but a symptom indicative of a number of pathologic tissue-changes with altered secretions. This condition, then, may occur in various inflammatory conditions of the nasal mucosa, as well as in ulcerative conditions, syphilis, malignant growths, retention of secretions from polypi, rhinoliths, and foreign bodies.

The atrophic change is the one to which this term is most commonly applied and upon which it really depends, and when considering the pathology and treatment we must, therefore, study the pathologic changes on which this condition depends.

The differences of opinion as to the cause of the disease furnish conclusive evidence that there is room for further investigation. In my opinion, it is subsequent to the so-called hypertrophic rhinitis. The mucous membrane consists of a basement-membrane upon which are arranged epithelial cells; underneath are bloodvessels, glands, and nerves, which are imbedded within the interstitial submucous tissue; its essential function is to secrete mucus.

Inflammatory conditions, with engorged vessels, causing intra-vascular pressure, are followed by exudation, which relieves the intra-vascular pressure, but which in turn brings about extra-vascular pressure or interstitial infiltration.

If this inflammatory material organize there will be interstitial thickening followed by contraction, but in either case nutrition will be interfered with, causing a certain amount of atrophy, with consequent degeneration and alterations dependent upon the extent of nutritive change. This alteration of tissue interferes with normal glandular secretion and elaboration, so that the material elaborated is more highly albuminous and slightly more fibrinous, rendering it highly coagulable; hence the tendency to the formation in the sinuosities of "crusts" or "slugs."

Herzfeld, of Berlin, has been able to demonstrate the presence of muscular fiber even in the Schneiderian membrane, and in this statement he has been confirmed by Kölliker and Zuckerkandl. Voltolini, however, failed to find such fiber.

If we grant that thickening and contraction do not take place, the atrophy can be explained in the same manner as red atrophy of the liver. When the mucosa is once passively congested it tends to remain so, and by continued intra-vascular pressure the interstitial tissue atrophies and degenerates. When the submucosa and cavernous tissue are cyanotic the epithelial lining dependent upon them for nutrition must necessarily undergo degenerative changes. The infiltrated cells, together with the proliferated, fixed cells, may from poor nutrition undergo granular change.[1] The transition from hypertrophy to atrophy does not necessarily imply the presence of ozena; in some cases with widespread atrophy, and in which the nasal capacity had greatly increased, no odor could be detected. According to Zuckerkandl, hypertrophy and atrophy are more pronounced in the respiratory region, yet by no means limited to that area, but not infrequently invade the olfactory area. This condition may exist in one or both nostrils. The condition of unusual size of the nostrils is more a result than a cause, dependent upon the amount of contraction and atrophy. In many cases there is narrowing of the rhino-pharynx; in some cases adenoid vegetations form an important element, and in such cases the rhino-pharynx should be carefully treated.

[1] The examination of sections made from tissue removed showed in three cases the thickened interstitial tissue, while in two cases the atrophy was due to pressure from engorged vessels. In each case the tissue was examined within twenty-four hours after removal.

Much has been written in regard to the effect of bacteria in catarrhal conditions. The normal nasal secretion may possess anti-microbic properties, but such is not the case with inflammatory exudates. That there is any etiologic connection between bacteria and the disease remains to be proved. In my own experience I have been able to isolate many germs from inoculations made from the diseased exudate in which marked odor existed. Some are pathogenic, others non-pathogenic, but against any one germ being an important factor is the fact that no one germ was always present. In most cases in which the odor was pronounced I found present a germ which by macroscopic and microscopic appearance, as well as by the test of *sense of smell*, was undoubtedly the bacillus fœtidus. It may be noted that Löwenberg, Christovitch, and Fraenkel believe in the microbian pathogenesis.

The history generally given by the patient is that the trouble began in a series of "colds in the head," followed by marked anterior and posterior nasal discharge. As the case progresses the character of this discharge alters from a thin, slightly colored discharge to a thick, purulent one, and continuing so for some months, with slight exacerbation, only to return with increased severity, the discharge becoming more albuminous, with a tendency of the secretions to dry, or "crust," and form "slugs" in the sinuosities of the fossæ, with some little odor noticeable. This condition goes on from bad to worse. The patient suffers from frontal headache, which is increased on stooping; sharp neuralgic pain over the malar prominence, or "face-ache;" itching and burning of the eyeballs; irritability and depression; constant itching and burning in the nares, due to the presence of altered secretions, and by constant blowing of the nostrils the condition is only aggravated. On swallowing, the patient experiences that peculiar sensation of fulness in the palate-region due to the accumulation and retention of secretions in the post nasal space. Usually the general health is impaired and the patient is anemic.

As to anemia, almost all cases exhibit it in which there is interference with nasal breathing. This has been clearly proved by a series of blood-examinations of cases in which there was nasal obstruction; counts being made before and after relief. Usually only two or three counts can be made after treatment, but in all cases the count shows a rapid increase in the number of corpuscles per cubic millimeter, and not only an increase in number, but the shape of the corpuscles, from being markedly irregular and crenated, becomes normal in appearance. My attention was first directed to this fact by Dr. Sajous, and through his suggestion I was led to make the investigations.

Zaufal observes that fetor of the breath is most marked in young subjects, and that after twenty it is less. In this I do not agree, as in some of the cases which came under my observation the patients were over thirty, and if the odor was then *less*, the preëxisting condition must have been pitiable. Surely those whose specialty necessitates their sitting in front of a patient afflicted with ozena will agree that it is one of the most offensive of conditions, and that its cure means to the patient what no one can realize except one thus afflicted.

During the hypertrophic stage of the disease small nodular masses are discharged, described by the patient as pieces of flesh. Microscopically, these masses are usually polypoid or adenoid; their presence is indicative of tissue-destruction.

The plan of treatment from which I have been able to obtain the best results is: (1) Thorough spraying of the membrane with some solvent of albuminous material; (2) washing away of this material by means of an alkaline antiseptic solution; (3) thorough drying of the membrane; (4) the application of the remedial agent, best in a solution, which will adhere to the membrane. After cleansing and drying the membrane the next step is to apply a stimulating, irritating substance which will establish an acute inflammation of the parts. This is simply applying to the mucous membrane the general surgical methods of treating chronic superficial inflammations by converting them into acute inflammations. In this way one will produce hyperemia of the parts, deplete the circulation by increased activity of the blood-current, and lessen the engorgement. This end is also furthered by transudation, which, being on a mucous surface, has free drainage.

When a copious watery discharge has existed for at least ten days then the cleansing and drying should be followed by a stimulating antiseptic solution. In cases in which the atrophic changes have been followed by degeneration the benefit derived from treatment is very slight except so far as relates to the lessening of the odor.

As a solvent for the albuminous material, hydrogen dioxid (15 vol.) is possibly the best. To wash away this material an alkaline solution of sodium biborate and bicarbonate with cinnamon-water and camphor-water, or any of the alkaline washes, is good. After carefully drying the membrane, the parts can be stimulated and irritated by applying oil of mustard in benzoinol or liquid albolin by means of an atomizer. As an irritant it should be used in some cases as strong as six or eight drops to the ounce.

If the condition is not too far advanced this plan of treatment has, in my hands, been most successful, the formation of slugs being entirely relieved, as well as the dryness and itching of the nares, the

fulness of the post-nasal space, the secretion becoming almost normal. The patient's general health must, of course, be improved by tonics, regular out-of-door exercise, and rest.

1632 Chestnut Street.

CLINICAL LECTURE.

PULMONARY TUBERCULOSIS.

A Clinical Lecture
delivered at the Philadelphia Hospital.

By SOLOMON SOLIS-COHEN, M.D.,
one of the physicians to the hospital; professor of clinical medicine and therapeutics in the philadelphia polyclinic, etc.

Gentlemen: I have brought this array of patients before you to-day in order to preach a sermon. I want to preach to you the gospel of hope in the treatment of tuberculosis.

We cannot say that patients in this hospital are subjected to the most favorable conditions for the treatment of pulmonary tuberculosis; we do the best for them that circumstances will permit; and we do much better for them than could be done by their relatives and friends at home. But we are not able to command all that we would like in the way of nutritive and other therapeutic measures. Notwithstanding this, we are still able to keep a large number of our patients comfortable, and to prolong their lives for considerable periods.

The patient to whom I first call your attention—Henry D.—is aged fifty years, and has been in this hospital about five years. When you read in the newspapers that somebody or other, perhaps a so-called physician, for many quacks have "regular" diplomas, and of all quackery the quackery of a physician fallen from grace is the worst—when you read that such a one has invented or discovered some wonderful remedy for consumption, and that he has given it to one or two or four thousand patients, and that in ten minutes or ten days they have all been cured, just remember that this patient has been here for five years and, though he is kept very comfortable and has frequently for many months together been without cough or night-sweats or febrile temperature, enough improvement, therefore, to build several newspaper "cures" upon, he is not well yet. Cases of pulmonary tuberculosis have, even when left to themselves, an average duration of life of some four years. Those, therefore, who talk about "curing" pulmonary tuberculosis by novel methods and who report cases of "cure" under anything less than five years, are either unfamiliar with the natural history of the disease or, for reasons sufficient to themselves, do not make use of their knowledge. In a few months, or even in one or two years, nothing can be said as to the ultimate issue of the case; and I want to impress this upon your minds, because I do not want you to be misled, either by quack things, like the "Amick Cure," or semi-quack things, as was the "Koch Cure" in its incipiency, into the belief that there is a "specific" against tuberculosis, or by the unfortunate example of Koch and his followers into premature announcement or premature adoption of any line of treatment. Six years at least must be allowed to elapse after the institution of any particular treatment in an ordinary case of pulmonary tuberculosis before one is entitled to say whether or not it has been curative. We may, of course, say in any reasonable time, in a few months if circumstances warrant, and more especially if the treatment has stood the test of years in other cases, that it has kept a patient comfortable, that it has increased his strength, that it has apparently augmented his chances of recovery; and this word—recovery—is the one that I would like you to use rather than *cure;* because *cure* implies that something brought in from the outside has conquered the disease, and *recovery* means that something within the patient has wrought a change in his condition which has brought the morbid processes to an end. We have to aim, in the treatment of this disease, at recovery, to be brought about not by "specifics," not by miracles, but by various measures, principally hygienic, which put the patient into such condition that the exciting causes of the disease are powerless to harm him. It is the *vis medicatrix naturæ* which limits and finally brings to an end the pathologic processes, and the physician's function is to stimulate that inherent tendency to recovery, to assist its action, to remove the obstacles that hinder its success.

The theory which I hold as to the causation of pulmonary tuberculosis, and tuberculosis in general, is somewhat different from that which is generally taught, and the treatment advised is, therefore, based upon a conception of the essential nature of the disease, differing in some respects from the generally accepted view. In order that you may understand the reasonableness of the treatment, it is necessary for me to say a few words concerning the etiology and clinical pathology of pulmonary tuberculosis. I assume a full knowledge upon your part of the morbid anatomy and histology so far as determined. Now do not understand me as claiming that the treatment to which these preliminaries are to lead up is novel or a special discovery of my own; there may be some points of detail founded upon personal experience, but the only personal element I wish to impress upon you is a point of view which will necessarily influence your estimate of the relative importance of the different therapeutic measures.

We all know, since Koch has shown us, that in tuberculous lesions there is usually found a certain microorganism which is called the *tubercle-bacillus;* and we all know that injections of the sputa of tuberculous subjects, or of cultures of the tubercle-bacillus, or of toxic materials containing either bacilli or their products, or products of the organism infected with bacilli, will set up a disease having lesions resembling those of human tuberculosis, in susceptible animals—in rabbits and guinea-pigs particularly. But we also know that injections of any of these substances will not ordinarily set up the disease in certain other animals—in horses or donkeys, for example, or in dogs, or in goats. Evidently, then, the poison administered to the one group of animals being the same as that administered to the other group, while the result is different, there must be some difference in the two sets of animals which causes this difference in result. The only possible conclusion, therefore, is that the tubercle-bacillus and its

products are not alone sufficient to cause the disease, but must act in conjunction with some peculiarity or defect in the constitution of the infected animals; because if the bacilli and their products were of themselves a sufficient cause of tuberculosis they would cause it in goats and dogs and horses just as readily as they cause it in guinea-pigs and rabbits and in certain kinds of cattle.

Extending our observations to man, we find upon clinical evidence that men can also be divided into two groups; that certain individuals cannot be infected with tuberculosis, and that other individuals can readily be so infected. Shall we then say that some persons are "susceptible" to the disease and others "insusceptible" or "resistant," and rest satisfied with that—imagining, perhaps, as is too often the case in medical problems, that by simply re-stating a fact in somewhat technical phraseology we have explained it.

Suppose that it had been determined, in this city, for example, that certain structures were more liable than others to be burned down—that if the torch were applied to certain houses they would quickly be in a blaze, but that certain other houses could not be set on fire, what would be the most rational method of preventing conflagrations? Would it not be to try to make all the houses alike "insusceptible" to fire, and before that was possible would it not be necessary to definitely find out in what the difference consisted that made the one house "resist" and the other "yield?" And the same principle must guide our steps in seeking the rational treatment of tuberculosis. We must not give time to the study of the bacillus alone—we must study it, of course, and find out all there is to find out about it—but we must study more particularly the human constitution and determine definitely why it is that some persons are resistant and others non-resistant to the tuberculizing process.

And this is the point wherein my teaching departs from the accepted doctrine. The existence and, at last, the importance, of "susceptibility" is acknowledged by all. A favorite comparison is that of "seed and soil." But I wish to go much farther than this. I hold that normally the human body is never a "favorable soil" for the "seed" of tuberculosis. To be such it must first become abnormal—that is, diseased. In other words, the condition that renders human beings liable to the invasion of tubercle-bacilli, and to the morbid processes thus set up, is the preëxistence of disease; and this disease is something definite, something to be sought, located, described, treated. It is the fundamental pathologic process concerned in the morbid complexus we call tuberculosis; the invasion of the bacillus and its results are epiphenomena. These epiphenomena involve dangers and require treatment on their own account—we must try to put out the fire if possible, but more important is the study and treatment of the condition of primary disease, without which the bacillus might come and go harmlessly. We must try to make our patients *fire-proof*, and they need not fear the incendiary.

But first let us take a step further toward the substitution of a definite conception for the vague term "susceptibility." In guinea-pigs and rabbits lesions histologically indistinguishable from those produced by living bacilli can be produced by dead bacilli, by powdered glass, and other non-living irritants. Similar lesions similarly caused have occasionally been seen in man. Cornil and Toupet report a case due to irritation by a fragment of oyster-shell. These lesions are called *pseudo*-tubercles nowadays, because they do not contain living bacilli—a remarkable illustration of the fallacy called in logical terminology *petitio principii*, "begging the question" or "arguing in a circle."

In pseudo-tuberculosis we have the histologic lesion, but not the toxemic symptoms of bacillary tuberculosis. But certain forms called "zoöglear tuberculosis" present both lesions and toxemia, although a different microbe from Koch's bacillus is found—probably several different microbes.

The evident conclusion is that long ago formulated by Formad: "a definite soil, an indefinite irritant," for the lesions, and for the toxemia different living organisms and chemic poisons resulting from their development and the reaction of the tissues.

In most cases, I grant, the irritant producing the lesions, and the organism producing some of the toxemia is Koch's bacillus; but even so, it is by no means certain as yet that some of the most destructive lesions and most of the toxemic phenomena are not due to the action of other associated organisms or of poisons produced by them.

Be that as it may, the lesions wherein we can best discover the nature of the "definite soil," in which alone tuberculous lesions can develop, are the pseudo-tubercles, because here the problem is purely histologic and uncomplicated by intoxication and its results. While the morphologic and chemic peculiarities that must exist have not yet been satisfactorily or completely elucidated, it seems to me that a certain broad generalization is fully warranted: that the production of the histologic tubercle is an evidence that *the tuberculized tissue lacks reparative force*. With dead bacilli and mechanical irritants the lesions are strictly localized to the points irritated. With living bacilli they are more or less diffused, because the irritant is reproduced within the body and carried to new areas. Yet in cases killed by "Koch's remedy" recent lesions without bacilli have been found, apparently indicating that under the peculiarly depressing effect of the tuberculous intoxication, tubercles may form even without local irritation.

In normal tissue partial breaking down or complete death of cells through exercise of function, through exhaustion of vitality, and probably through injury, is constantly taking place. As you have seen in non-infected wounds, repair takes place by the production of new tissue-elements or cells, which either produce a new tissue like the original or a fibrous scar-tissue.

In subjects who become tuberculous the vital energy resident in the cells or tissues is not sufficient to produce either new tissue like the original or durable scar-tissue; but when irritated, as by tubercle-bacilli or their toxin, or by powdered glass, etc., or broken down by function or by disease of various kinds, the tissues in an ineffectual attempt at repair produce degraded cells incapable of organization—in other words, tubercle-cells. Tubercle-cells perish from lack of nutriment or under bacterial attack, and ulceration or caseous degeneration takes place. In some subjects, to whom we will recur in a moment, the surrounding tissues react to form a scar, or

calcareous deposit takes place, and healing is thus brought about. The therapeutist's object is to put all his patients into such a condition that this may be the outcome. To learn how to do it a study of the different degrees of "susceptibility" is necessary.

First, in studying the group of susceptible persons, or as I prefer to call them, using a term introduced by Jaccoud, *hypotrophic* subjects (hy*po*, not hy*per*), we find them sharply divided into two classes—those in whom the condition is congenital, and those in whom it has been acquired after birth. Therapeutics can do most with the latter class, but much even with the former class. The congenitally hypotrophic may further be divided into those in whose families tuberculosis is hereditary, and those in whom other conditions than parental tuberculosis have given rise to hypotrophy in the offspring. For instance, carcinoma, syphilis, diabetes, alcoholism, and other conditions which lower the parents' vital energy make the children prone to tuberculosis. Among those who are not congenitally hypotrophic, the condition may be induced by privation, by excess, by depression. Thus it may be due to a life of poverty, or of debauchery, or of overwork; to the effects of influenza, of typhoid fever, of measles, of diabetes; to residence in damp places, especially if light and air are excluded; to severe exposure; to the exhaustion of prolonged lactation, or of too many or too frequent pregnancies. The rigorous practices and depressing doctrines of certain religious sects and orders notoriously render their members liable to consumption, as may mental or emotional shock or profound grief, as in disappointed love or defeated ambition; and one of the most potent causes is confinement, as in prison, or in certain occupations which must be carried on indoors, in crowded, ill-ventilated, and over-heated rooms.

Thus carnivorous animals, which in the wild state are probably not liable to tuberculosis, almost invariably die of this disease after a certain period of captivity; and, on the other hand, even animals so susceptible as rabbits may escape all evil consequences from inoculation with virulent cultures of tubercle-bacilli if, after infection, they are allowed liberty in the open air and sunlight.

Graves, one of the greatest of clinicians, said: "It is important to know how to make a man phthisical, as by pursuing an opposite course we may prevent it." The deduction from what I have said is so obvious that I need not take time now to elaborate it. One point only let me make in passing: If you want to keep healthy lungs you must give them facility for proper development in the open air; if you want to make tuberculous lungs healthy once more, you must exercise them in the open air; or, if they cannot properly exercise unaided, you must resort to artificial means, such as the inhalation of compressed air.

To resume our study of that particular group of persons who are susceptible to the action of the exciting causes of tuberculosis, we find certain differences in their susceptibility. In some the fire, once started, burns rapidly, and cannot be estopped until the structure is destroyed; in others it can be checked after it has burned half-way, or less, but remains smouldering indefinitely, ready to flame up again; in others, it can be quickly checked, and finally brought to an end.

We find, for example, a patient like Henry D., in whom there is a certain tendency to a limitation of the morbid processes, purely by the natural powers of reaction. Pathologic processes, like all others, can be limited in two relations—duration and extension, that is, in time and in space. We have extension in space and duration in time. In our tuberculous cases we must study the natural tendency of the human organism to limit the disease, and whether these natural powers limit the extension of the lesions in space, or the duration of the process in time, or both. Let us take, for example, the case of a normal or nearly normal man—one of the "insusceptible" group—who is performing the autopsy of a tuberculous subject, and is inoculated with the products of the disease. What happens? There may be no result, or there may be developed upon a wounded finger the "anatomist's tubercle." You have seen the growth—it resembles a wart. It is the result of a tuberculous process. But, although there are bacilli present, and histologically the characteristic cells of tuberculosis, the morbid product does not extend in space and the morbid process does not endure in time. Even if left to itself, the growth will in most cases disappear, and it always disappears very quickly if treated with lactic acid—a very simple therapeutic measure. This is an illustration of the highest tendency to limitation both in space and in time. Next in order, confining ourselves now to pulmonary lesions for the sake of simplicity, is the condition termed by Sir Andrew Clark "fibroid phthisis," or later, "fibroid tuberculosis." Histologically, tubercles consist of aggregations of degraded tissue-elements incapable of progressing to the formation of tissue like that from which they took origin, or even of durable scar-tissue. They are devoid of vascularity, and break down from want of nutriment, or under bacterial attack. Healing can take place only through the formation of scar-tissure, fibrosis, fibroid proliferation, by surrounding tissue. In fibroid phthisis cicatrization keeps pace with ulceration, the lesions are long confined in space, and the patient retains a fair degree of general health. Such cases are frequently mistaken for asthma. The process, however, is not limited in time, and may last for twenty or even forty years, the patient dying sometimes of intercurrent disease. In some instances the extension is at times, or toward the end, rapid, and the patient does not survive so long.

In Henry D., and in the man beside him, we have illustrations of a third degree of tendency to limitation in space, without much limitation in time. The process in these patients is confined to a limited area, principally at the apices of the lungs, and extends very slowly, but yet endures. It has endured, under our own observation, for five years in the one case, for three years in the other, notwithstanding the fact that the patients' resistance has been increased by treatment. In Henry's case there are two large cavities, one in each lung, in which from time to time we detect signs of activity, which, however, subside under treatment, and even without treatment. In another group of patients we will have an exactly opposite tendency. General reaction is good when aroused, but there is little local resistance. The lesions are but feebly limited in space, but there is a strong tendency to limitation of the morbid process in time; that

is to say, so long as it lasts it spreads more or less rapidly, and may involve a considerable extent of pulmonary tissue, yet it comes to an end in a comparatively short time. An illustration is shown by the patient G., in whom at present all active manifestations of the disease have ceased, but who has in a few months lost so much pulmonary tissue that a cavity in the middle of the right lung is easily demonstrated. The question, in a patient of this kind, is: Will the time-limitation come into play before the destruction of tissue has gone too far? Nature has been bountiful to us in the matter of lungs and other organs, and a total loss of half the normal amount of pulmonary structure is not incompatible with good health, as is shown by a remarkable case of Tillmann's, in which disease and surgery had practically removed the whole of one lung, the other lung remaining healthy.

And then we have, unfortunately, another group of patients, those in whom there is no tendency to limitation either in space or time, and they form the type of what is termed "galloping consumption." The morbid process extends rapidly, and is not limited, except by the death of the patient. I have never seen cases of that kind recover. Of the other classes, I have in many, many cases seen the recovery prolonged for a sufficient number of years to enable one to say positively—yes, this patient has recovered.

In some patients who exhibit a tendency to limitation of the process in time, or limitation of extent of the lesions in space, there happens a series of phenomena which it is very important for us to understand. The processes apparently come to an end; the patient is to all appearances well; upon physical examination we elicit not the signs of an active process, but merely the signs of the result of previous destruction. That state of affairs continues a number of months, or a number of years, and suddenly, without any well-recognized cause, or perhaps through the intervention of some exposure, or of something which reduces the vitality of the patient, such as mental anxiety or bad nutrition, everything starts up again. The patient gets into a very alarming condition, and the family expects his immediate dissolution. Then, just as the process stopped the first time, it stops again before very much damage has been done. We may thus have a case which goes on for almost an indefinite number of years with alternating periods of apparent good health and of acute disease. I have in mind now a case which has been under my observation for many years, in which there have been three such attacks, and yet the patient (from a letter which I received about two weeks ago) is now in such good condition that she weighs about 175 pounds; has no cough, no fever, and is, to all intents and purposes, well. That woman has been in an alarming condition, under my own observation, at least three times. Here is one illustration of what I mean by "preaching the gospel of hope." Never give up the ship in any case of pulmonary tuberculosis! You do not know until the final issue whether or not it is a case susceptible of limitation; and the harder you try, the greater will be the number of cases in which you will bring about the limitation in space, sufficient to save life for the time, even if the process remains latent, to break out again. Even if you strive hard in ten cases, and only one of them shows a good result, it is worth wasting your work on the other nine to save that one. But the proportion of successful results possible is much larger than one in ten. Under favorable circumstances—if we exclude galloping consumption and acute miliary tuberculosis—I should consider 50 per cent. of recoveries much under the mark. Further than this, even when recovery is impossible, life can be prolonged and suffering can be relieved.

The degree of success achieved will depend upon the hopefulness with which the treatment is undertaken and the persistence with which it is carried out, notwithstanding the supervention at times of alarming symptoms. Now, what is the proper line of treatment? I have already said that it is devoted almost entirely to increasing the resisting power of the patient. Let the bacillus alone and strengthen the patient, and if you strengthen the patient to the proper point, his own vital forces will be sufficient to take care of the bacillus. I think the French records show that in at least 50 per cent. of the cases submitted to autopsy in which there has been no other evidence of tuberculosis, clinically or pathologically, the bronchial glands are found to contain tubercle-bacilli. What does that mean? It means that all of us are practically attacked by tubercle-bacilli all the time, and that those of us who are in a normal condition possess the requisite amount of vital energy to enable the bronchial and other glands to closely imprison and finally destroy the invaders, and no harm is done. Therefore, let me once more repeat, for this is the lesson I want to teach, that the aim of treatment must be to make other people as strong as those who resist naturally. You remember what Oliver Wendell Holmes says in *The One-Horse Shay*, and it is good policy even in medicine:

> ". . . It's mighty plain
> The weakest place must stan' the strain;
> An' the way to fix it, ez I maintain,
> Is only jest to make that place as strong as the rest."

You remember that the one-horse shay ran for one hundred years without breaking down and then crumbled into powder. What the deacon did as a carriage-builder we must try to do as physicians—*make the weakest man as strong as the rest.* In the case of patients whom we know to be by heredity liable to tuberculosis, we must early institute preventive treatment. This has two branches: First, the avoidance of infection. Of this I will not now speak, except to emphasize the necessity for teaching your patients not to spit around indiscriminately, but to take such care of the sputa and other discharges that they may not become dried, ground into dust, and being wafted about by the air become a source of danger to others. Avoidance of infection is not always within our control, therefore the other branch of preventive treatment is even more important. This consists of invigoration, or in other words the reinforcement of vital energy.

The methods by which we may bring about this reinforcement of the vital energy of the patient are fortunately quite simple; the details are very many. To lecture upon the details would take several hours, but the principles are few, and if you once have a grasp of the principles you can make the detailed applications of them from your own common sense. The principles are the same, whether applied in prophylaxis (in the

endeavor to prevent disease) or in therapeusis (in treatment having for its object the facilitation of recovery). We must try to control the daily life of the patient—control it, so far as may be possible. First, in relation to his place of residence. That includes his exposure to light and air. The subject of climate cannot be treated in the few words now at my disposal. But this I will say: while proper climatic treatment can do much good, improper climatic treatment does much harm. One climate is not suitable for all cases, just as one coat will not fit everybody. As a rule patients with a robust tendency do better in cold and elevated regions, while those who are in need of soothing and protective measures, who easily take "cold" and have a tendency to fever or nervousness, are better off in warm, and if possible, comparatively dry places. Dryness is a great desideratum always, but it must not be excessive, as it may provoke hemorrhage. The open sea is beneficial in nearly all cases, but the seashore is to be avoided whenever active destruction of tissue is in progress. Many patients cannot avail themselves of change of climate. Such patients must be gradually encouraged to be much out of doors in all weather, proper means of fortifying them against violent changes being resorted to. Secondly, we must control the patient's clothing. We must see that he wears such clothing, light and porous, and not constricting the body at any point, as will best protect him from vicissitudes of weather. Woollen or silk underwear is preferable, as it keeps the skin, as regards moisture and the body-temperature, as nearly as possible in the same condition in different circumstances of weather. Women must be told to give up corsets, tight-waisted bodices, and the like, and all must avoid overheating scarfs, boas, and the like around the neck. Waterproof coats and overgarments are objectionable. Thirdly, we must control the patient's food; administering such aliment as will yield the greatest amount of energy with the least expenditure of vital force in its digestion and assimilation. Nitrogenous and fatty foods, predigested if necessary, and a moderate amount of greens, best fulfil the requirements. In most cases overfeeding, six meals a day, or feeding with the stomach-tube twice a day, will be useful. Fourthly, we must control the patient's activities. We must regulate his exercise and his rest. One authority will insist upon rest in the treatment of pulmonary tuberculosis, another with equal propriety urges the importance of proper exercise. They are both right, both wrong. Whoever urges rest without exercise looks only at one side of the shield; whoever urges exercise without rest looks only at the other side of the shield. You must regulate both—the patient's rest and the patient's exercise. When there is a continuous tendency to fever, the temperature reaching or exceeding 100° F., put the patient to bed and use ice to the chest, over the heart, until the fever is controlled. Under all other circumstances see that the patient spends as much time as possible out of doors, walking, riding, cycling, driving, but never to the point of fatigue. In other words, exercise graduated according to the patient's ability is what is needed. We must likewise take into consideration the patient's vocation and his avocations—that is, his ordinary pursuits, the work he does for his livelihood, and those pursuits which he takes up for recreation and amusement. These must be so arranged, if possible, as to be a part of the treatment. A business that keeps the patient out of doors is the one to be preferably followed; and a most important therapeutic factor in putting the patient into that condition where he can recover, is to afford him cheerful and innocent amusement. Fifthly, we must teach our patients to use their lungs properly, and we must dilate the unused or little used portions. This is accomplished by certain gymnastic measures and by the inhalation of air at modified pressures. Patients can be overfed while inhaling compressed air, who could not be overfed otherwise. Sixthly, we must insist upon the free use of water internally and externally. The proper, judicious use of cold water, by douching, sponging, bathing, and the like is one of the best measures we have for stimulation of nutrition and for education of the vessels to resist changes of weather. The drinking of hot water before meals keeps the digestive tract clean and facilitates secretion and excretion generally. This is especially necessary when large quantities of meat are eaten. Seventhly, we must pay careful attention to the patient's secretions and excretions, endeavoring by hygienic or medicinal means, as necessary, to keep them quantitatively and qualitatively normal. Finally, and least important—and yet of very great value—is the administration of drugs by the mouth, by inhalation, by the skin, or in any other way. I do not underrate drugs; I know we get much good from the use of drugs in the treatment of pulmonary tuberculosis, and I would not like to have to give up such agents as arsenic, strychnin, iodin in its various forms, alcohol, turpentine, hydrogen dioxid, and creosote. But if we should be compelled to choose between hygienic measures and drugs, I would unhesitatingly prefer the former. I believe that a greater proportion of cases would recover under the proper use of rest, exercise, air, sunlight, food, and water, than under the most approved medication with the neglect of the other means. And that is, I think, the reason why some physicians have taken too hopeless a view of the possibilities of therapeutics in the treatment of this disease; they have concentrated their attention upon drugs; they have looked for some specific which would work a miracle and change the constitution of a patient in an hour, or a day, or a year. It is an impossibility. But if, instead of simply writing a prescription for cod-liver oil or hypophosphites, which were the fads at one time, or for creosote, which is now the fad—all good fads in their way—if, instead of saying, "take this three times a day," the physician will talk with the patient for half an hour as to just how he is to live, just what he is to expect in the natural process of the disease, how he is to guard against different accidents which occur in the course of the disease; and then, not only that, if every time the patient comes we question him closely: "What are you eating, drinking, doing in the way of rest, exercise, amusement, and occupation?" and insist that our directions shall be carried out literally and exactly, we will accomplish results which cannot be accomplished in any other way. And therefore I desire you to make every case of pulmonary tuberculosis that comes under your care an individual study, giving such drugs as may be indicated, and concerning some of these we will have a talk hereafter, but above all regu-

lating the daily life of the patient in all the different relations of which I have spoken, in accordance with the different conditions which each particular case may exhibit.

CLINICAL MEMORANDUM.

PRACTICAL APPLICATIONS OF POTASSIUM PERMANGANATE AS AN ANTIDOTE TO LAUDANUM.

By EDWARD ROLLIN GREGG, M.D.,
AND
G. B. MORELAND, M.D.,
OF PITTSBURG, PA.

On the evening of March 13, 1894, the patrol-wagon brought to the Homeopathic Hospital of Pittsburg, at 10 o'clock, George D., in the third stage of opium-poisoning. He had taken two and a half ounces of laudanum at about 7.30 o'clock that evening. When discovered, in the stables of the Eureka Ice Co., his breathing was stertorous and he was entirely unconscious. A doctor was called, who treated the patient until nearly 10 o'clock, and then sent him to the hospital as a last resort.

Upon admittance the man was in the following condition: The face was livid, the lips blue, the respirations shallow and four per minute, the pupils smaller than a pin-head and inactive, the corneæ insensitive to touch, the pulse weak, the bladder distended. The patient was in a state of most profound coma. Pressure over the supra-orbital nerves failed to elicit any response.

Artificial respiration was at once practised and the patient was catheterized.

From the apparent hopelessness of the case it was decided to try the newly suggested and experimental antidote—potassium permanganate. A solution of this salt was hurriedly made (which was afterward computed to be one-half the strength of a saturated solution), and two drams injected hypodermatically into the left arm at ten minutes after 10 o'clock. Artificial respiration was continued, the stomach was washed out with water, then with coffee, and one pint of coffee was allowed to remain in the stomach.

The man's condition remaining unchanged, he was given $\frac{1}{100}$ of a grain of atropin hypodermatically at 10.45 P.M.; and $\frac{1}{120}$ of a grain of atropin in the same manner at about 11 o'clock, but with no effect, not even upon the pupils. Ice-water was thrown over him and he was slapped with towels, but all in vain.

At 11.45 P.M. the man was barely alive; he was then given another two drams of the same permanganate solution hypodermatically. This injection seemed to increase the depth of the respirations very slightly, but otherwise there was no change. At 12.15 A.M., March 14th, he was given still another hypodermatic injection of two drams of the permanganate. Almost immediately there was noticed a perceptible increase in the depth and number of respirations; the face became less livid, and the patient's condition seemed slightly changed for the better. At 12.30 A.M. a slight movement of the fingers was noticed, and the man was again given a hypodermatic injection of two drams of the same solution of permanganate. The effect of this was noticed almost at once. The patient put his hand to his mouth, his respirations became still deeper, his face and lips became brighter, and a sigh escaped him. At 12.45 A.M. he was given still another hypodermatic injection of permanganate of the same strength and amount. Immediately he put his hand to his mouth, moved his legs, opened his eyes for a moment when loudly spoken to, and in response to a question tried to answer, but could not articulate. At 1 A.M. another injection of the same strength and amount as before was given him. This increased the depth and number of the respirations still more and his corneæ became sensitive to touch for the first time.

At 1.15 A.M. the man's respirations were full and 10 to the minute. He opened his eyes and answered "What," when called by name, but relapsed into a lethargic state, from which he could be aroused by speaking loudly to him. The corneæ were now very sensitive to touch. He was again catheterized and twelve ounces of urine withdrawn.

At 1.30 A.M., after a brisk slapping he recognized his employer, who was present.

At 2.15 A.M., the respirations were 10 per minute and full, the pulse was 104, and the temperature 96°. The patient now answered questions, but wanted to sleep. He was now pronounced out of danger, was left in the care of a nurse, and Dr. Moreland and I retired.

At 4 A.M. I was called and found the patient rather stupid, but otherwise in good condition. He talked intelligently, although his pupils were still contracted and inactive. I now ordered him to be walked until I should see him again, which I did at about 8.30 A.M. on March 14th. I found him at this time perfectly sensible, though shaky and trembling. He informed me with a smile that he was "dead tired" and would like to go to bed. I allowed him to sit down, with someone to watch him, but he did not go to sleep.

About 10 A.M. he had nausea and vomited. At noon he was still shaky, his tongue dry, and he said that he had no appetite. However he drank a bowl of milk for his dinner. He complained all the afternoon of being tired, but he was not allowed to go to bed. At 5 P.M. his respirations were 18, the pulse 82, and the temperature 100°. For supper he ate some bread and drank some tea. In the evening I found him as sensible and talking as intelligently as could be desired. His left arm was now quite painful. He had been given hypodermatic injections in each arm, those in the left rather deeply. He was allowed to retire early, but the pain in his left arm kept him awake the greater part of the night.

The next morning (March 15th) his condition was improved, though his tongue was still dry. He was bright and clear-minded. Not until toward evening did his pupils return to their normal size and react to light. His arm was much swollen, very painful, and quite red; the redness extending from the shoulder to the elbow and increasing in intensity. At 5 P.M. his respirations were 24, pulse 112, and temperature 102.4°.

From this time until March 18th the man's condition remained about the same. An incision about two inches long was made in the left arm followed by a gush of about twelve ounces of pus, which was thin, brown, and malodorous. The night of March 18th the man was slightly delirious, but the temperature was only 100.4°. The night of March 19th there was a high delirium all

night, though unaccompanied by violence. At 4 A.M. of the 20th, the thermometer registered 99°, the respirations were 20, and the pulse 80, continuing the same during the day. The swelling and redness were disappearing rapidly from the arm. The delirium continued during the next two days unabated. On March 22d, fluctuation was detected in the right arm at the seat of the injections. Incision gave vent to about two ounces of odorless pus. The temperature now became about normal, and the arms better in appearance, with lessening of the delirium. From this time the man's condition steadily improved in all ways, and he was discharged cured on March 31st.

I cannot readily account for the delirium in this case. It did not appear until *after* the pus had been evacuated from the left arm, and continued for several days, while the temperature was not over 101°, and sometimes normal. After the pus in the right arm had been freed the delirium subsided, and yet I cannot think that it was due to this retained pus, for there was but two ounces, and the inflammation in that arm had been very mild, with very little pain or inconvenience. I have not been able to decide satisfactorily whether the delirium was due to the permanganate, to the after-effects of the opium, or to the previous drinking-habit of the patient. Certain it is, that in the following case of Dr. King's, there was no delirium following the administration of permanganate, although there was an inflamed arm, but no abscess.

In this case the permanganate received a crucial test (as the man could have been in no worse a condition and living), and it proved itself worthy.

On March 14th, the day following the admission of this patient, a patient suffering from laudanum-poisoning was taken to the Allegheny General Hospital, and permanganate of potassium was administered. The patient returned to consciousness soon after the administration of the permanganate. Unfortunately, the amount of laudanum given could not be ascertained, so that in this case the quick return to consciousness cannot positively be credited to the permanganate; that there was a marked improvement after the injection of the permanganate cannot be denied.

A few days later, Dr. W. D. King, of this city, was called to see a case of accidental poisoning in a woman who had taken one ounce of laudanum. When Dr. King arrived the woman was in a comatose condition. He immediately injected half a dram of a saturated solution of permanganate of potassium hypodermatically, and in one hour left the house pronouncing the patient out of danger. Dr. King does not claim that *only* the permanganate would have saved her life, but he does claim that it saved him the trouble and fatigue of walking his patient for several hours. These two cases I took the trouble to investigate, and give the facts as they were told to me.

These cases seem almost sufficient to prove that permanganate of potassium is the quickest-acting, if not the best, antidote to opium and its derivatives.

Dr. Juhel-Renoy, a promising Parisian physician, died recently, at the age of thirty-nine years, of typhoid fever. He made numerous valuable contributions to medical literature. His most recent work was, perhaps, his advocacy of the cold-bath treatment of typhoid fever.

HOSPITAL NOTE.

EXTRAVASATION OF URINE: EXTERNAL PERINEAL URETHROTOMY WITHOUT A GUIDE; DEATH FROM UREMIA.

Surgical Wards, Philadelphia Hospital.

SERVICE OF ERNEST LAPLACE, M.D.

[Reported by ALVAH M. DAVIS, M.D., *Resident Physician.*]

L. B., aged thirty-one, a bookbinder, and a native of Philadelphia, with a negative family history, had enjoyed perfect health until one year ago, when he contracted an acute gonorrhea, which lasted three weeks and left him with a slight discharge, which persisted up to the time of entering the hospital.

On admission, some dysuria with *ardor urinæ* and pain over the region of the bladder was complained of. The temperature was 99.4°, the pulse 68, the respirations 24. Physical examination showed the bladder to be somewhat distended and tender on pressure, and on squeezing the urethra a few drops of thin, gleety discharge exuded. The epididymis, testicles, and scrotum were apparently normal. Fully a quart of urine, very turbid and filled with flocculi, was withdrawn by catheterization. Examination showed the fluid to be of acid reaction, to have a sp. gr. of 1025, the nitric-acid contact-test showing a faint ring of urates; no albumin or sugar was present, but there was considerable mucus. Microscopically, bladder-cells, shreds of mucus, uric-acid crystals, and crystals of oxalate of lime were seen. On exploring the urethra, a stricture of large caliber was detected just anterior to the bulbo-membranous junction, admitting a No. 20 sound. After dilatation of the stricture the patient was able to void urine more freely, but complained of severe pains in the lumbar and suprapubic regions, with extreme prostration. The temperature became remittent or hectic in type, ranging from 102° to 103° evenings, to from 99° to 100° mornings. Stimulants and diuretics were given, and the bladder washed out daily with a quart of equal parts of distilled water and a hot, saturated solution of boric acid. Four days after admission the skin at the junction of the penis with the scrotum became inflamed, swollen, and tender to the touch, and on careful palpation an indurated area about the size of a peach-kernel could be detected, extending on either side of the median line. At this time considerable pain was experienced during the act of micturition, the patient being able to expel a few drops of urine only with violent straining efforts. On exploring the urethra it was found impossible to pass even a filiform bougie, enough urine, however, being voided to keep the bladder from becoming over-distended. Opium by the rectum, and hot compresses to the perineum were employed without affording much relief. The area of induration increased rapidly in extent, the skin of the prepuce and scrotal tissues becoming markedly edematous, and, forty-eight hours after the appearance of the extravasation, operation was considered advisable. The seat of the operation having been properly prepared and the patient anesthetized, an incision, about three inches in length, was made in the median line of the perineum, entering the urethra at its membranous portion.

About six ounces of acrid urine, mixed with pus,

escaped. A sound was then introduced into the bladder, and the incision continued upward in the urethra, cutting through the stricture. At this point some pus escaped, demonstrating the existence of a peri-urethral abscess. A staff being next inserted, the portion of the urethra containing the stricture and fistula was completely obliterated. During the operation considerable venous oozing occurred, but very little arterial hemorrhage. The wound, after being thoroughly irrigated, was packed with iodoform-gauze and the dressing held in place by means of a T-bandage. The temperature immediately after the operation was 102°, the pulse 112, the respirations 28. The heart-sounds were feeble, the muscular element of the first sound being especially weak. Urine trickled through the wound, and the edema of the prepuce and scrotum disappeared to some extent. Unfortunately, because of the constant escape of urine, the quantity secreted in twenty-four hours could not be measured, nor could it be examined subsequently for the presence of albumin. Internally, sulphate of strychnin, tincture of ferric chlorid, and whiskey were given, together with diuretics, but the patient's condition did not improve. A low form of delirium developed, accompanied by carphology and *subsultus tendinum*, the temperature (after the shock of the operation) remaining continuously high, with slight remissions. On the third day following the operation an attempt was made to repack the wound, when considerable venous hemorrhage occurred, being controlled with difficulty by constant digital pressure. The surrounding tissues looked flabby and indolent, showing no signs of granulation. Twenty-four hours later urine ceased to flow through the wound and another attempt was made to repack it, when venous hemorrhage again occurred and was again controlled with difficulty. On the fourth day after the operation the respiration became of the Cheyne-Stokes type, the delirium giving place to stupor and coma, the pupils became dilated, the pulse feeble and fluttering, the temperature subnormal, and death quickly followed.

The clinical diagnosis of the cause of death was uremia and extravasation of urine.

At the autopsy the following interesting conditions were noted: The weight of the left kidney was 5.5 ounces. The capsule was adherent in places, but otherwise stripped off readily and to an abnormal degree. The cortex was somewhat swollen and studded with minute, white, slightly elevated points, which extended downward into the pyramids. At one point in the cortex there existed a crater-like cicatrix, possibly gummatous. The left suprarenal capsule showed marked pigmentation; the right was normal. The pelvis of the right kidney was distended with a cloudy, serous fluid with a slightly ammoniacal odor. The cortex was striated and fatty, the same elevations being noted as were seen in the other kidney. The organ weighed 6 ounces. The tissues surrounding the wound were in a sloughing condition: namely, the scrotum and its contents, and the membranous and bulbous portions of the urethra. The heart weighed 12.5 ounces, and showed some hypertrophy of the left ventricular wall, but it was otherwise normal.

The other organs were in apparently good condition.

The pathologic diagnosis was: Large white kidney; acute hydronephrosis on one side; sloughing of the external genitals and perineal contents.

MEDICAL PROGRESS.

Esophagotomy and Gastrotomy for the Removal of a Denture from the Esophagus.—Wallace (*Lancet*, No. 3862, p. 734) has reported the case of a woman, twenty-eight years old, who during sleep accidentally swallowed a denture with five teeth attached, the presence of which in the esophagus was with considerable difficulty detected by means of a coin-catcher. Attempts at its removal without undue force, however, failed, and its position having been located at about midway between the manubrium sterni and the stomach, esophagotomy was performed as low down as possible. Even now the plate could not readily be removed, and, accordingly, gastrotomy was undertaken. After a little difficulty the esophageal opening into the stomach was found and the denture was then easily extricated with the aid of a pair of dressing-forceps. The mucous membrane of the stomach was brought together by a continuous suture and the serous coat by the Lembert suture. The wound in the abdominal wall was closed in the usual way. The esophageal wound was closed with fine catgut and the superficial parts with interrupted sutures, a small piece of iodoform-gauze being introduced to facilitate drainage. Dressings were then applied and the patient was put to bed. For forty-four hours after the operation nothing was given by the mouth, but nutrient enemata were given every four hours. For five days the enemata were retained and gave rise to no irritation. Morphin suppositories were introduced thrice daily. On the sixth day a slight diarrhea set in and continued for a week, although the enemata were withheld. Forty-four hours after the operation the strip of gauze was removed from the esophagotomy-wound, which was healthy in appearance and presented no evidence of saliva having escaped into it. A smaller, fresh piece of gauze was introduced, the wound having been powdered with iodoform. Two ounces of milk and barley-water were given by the mouth, but none escaped into the esophagotomy-wound. Thereafter, milk, cream, and barley-water were administered every four hours. On the fifth day, however, it was noticed that a little milk escaped into the esophagotomy-wound. It was, therefore, concluded to feed the patient through a tube passed through the mouth into the stomach. For a time the woman did badly, losing ground, for a brief period being actually maniacal, and her management was attended with a good deal of difficulty. By careful attention to the esophagotomy-wound cicatrization was brought about after the lapse of a month, and a few days later the woman was dismissed, cured. The report is concluded with the following propositions: 1. It is extremely dangerous to leave a foreign body in the esophagus, as disastrous results almost invariably ensue. 2. Such disastrous results may not occur for some time after impaction. 3. If attempts at removal of the foreign body with instruments fail, one should at once proceed to operative interference. 4. The operation of esophagotomy is not, *per se*, dangerous. 5. If the body be impacted low down, near the cardiac opening of the esophagus, gastrotomy is preferable to esophagotomy when the body is irregular. 6. By one or the other of these operations all parts of the esophagus are within reach. 7. The danger of opera-

tive procedure is mainly due to the difficulty of alimentation. 8. The superficial parts in the esophagotomy-wound should be left freely open, so as to heal by granulation.

Merycism.—From long and careful observation of a case of merycism in a male and from a study of the literature of the subject, LEMOINE and LINOSSIER (*Revue de Médecine*, 1894, No. 3, p. 200) conclude that this condition should be considered as presenting two varieties—a simple form and a pathologic form; while the latter includes three sub-varieties—a neuropathic form, with or without dyspepsia, a form of dyspeptic origin and directly related to the dyspepsia, and a form of dyspeptic origin but not disappearing with the relief of the dyspepsia. The condition must in its intimate nature be considered a gastric neurosis. The act of regurgitation is a reflex phenomenon whose point of departure resides in a congenital or acquired exaggerated sensibility of the mucous membrane of the stomach. The mechanism of the condition corresponds with that described in ruminants, and consists essentially in a spasm of the diaphragm and of the muscles of inspiration, diminishing the intra-thoracic pressure and tending to dilate the esophagus, while the abdominal muscles compress the stomach and cause the expulsion of its contents.

Appendicular Colic.—JESSOP (*British Medical Journal*, No. 1734, p. 627) contends that the vermiform appendix is liable to partial occlusion of its canal from various causes, some of which are permanent whilst others are transient. The symptoms by which such incomplete obstruction is to be recognized are those of appendicular colic. In cases of recurring appendicular colic, and especially if there be at the same time an increasing severity, the practice should be to recommend the removal of the appendix. The time is believed to be past when such misleading terms as typhlitis, perityphlitis, cecal and pericecal abscesses should longer be applied to diseases having their origin in the vermiform appendix, as appendicular colic, appendicitis, and appendicular abscess more accurately describe the conditions present.

THERAPEUTIC NOTES.

The Treatment of Typhoid Fever by the Ingestion of Large Quantities of Water.—MAILLART (*Revue de Médecine*, November 10, 1893, March 10, 1894) maintains that the treatment of typhoid fever by the ingestion of large quantities of water is worthy of recognition as a useful therapeutic measure. In order that the treatment shall be efficacious the patient should receive from five to six quarts of water daily during the febrile period. There is no contra-indication to this mode of treatment; weakness of the heart constitutes an indication rather than the reverse. The results obtained by this mode of treatment consist in a progressive subsidence of the febrile process, a disappearance of the dryness of the tongue, and a marked sedative influence upon the nervous, circulatory, and renal phenomena. These results are to be ascribed to the oxidation, the solution, and the elimination of the toxins produced in the progress of the disease and also of the dejecta. The oxidation is indicated by an increased production of urea, and its elimination by the skin and the kidneys in the profuse perspiration and abundant diuresis. The diuresis aids in the restoration of the integrity of the kidneys, as shown by the disappearance of the albuminuria. This mode of treatment has no noteworthy influence upon the course, the duration or the evolution of the disease. It is not attended with any unpleasant complications. It has the great merit of facility of application, and the coöperation of the patient is readily obtained.

Chloroform and Morphin in the Treatment of Chorea.—CHURTON (*British Medical Journal*, No. 1734, p. 633) has reported the case of a girl, seventeen years old, with a rheumatic history but no existing arthritis, who came under observation in an attack of moderately severe chorea. The movements increased rapidly in violence, unchecked by chloral given frequently in doses of 20 grains. Beginning with gr. ⅙ of morphin hypodermatically, immediately followed by the inhalation of chloroform for a few minutes, and gradually increasing the dose of morphin to gr. ¼, always in conjunction with inhalations of chloroform, the movements were kept under control with the greatest ease. The smaller doses produced sleep lasting from one to three hours, the patient waking no better; but after the dose of gr. ¼ she slept almost uninterruptedly for nine hours, and was then so greatly improved that she required no further medication except by the mouth—in fact became an ordinary, mild case, and left the hospital well at the end of about six weeks. It is pointed out that with moderate doses of morphin there is often a delay of many minutes before sleep occurs; the inhalation of chloroform for two or three minutes produces immediate sleep, which is continued by the action of morphin. If necessary the chloroform may precede the injection of morphin.

The Treatment of Fracture of the Patella by Arthrotomy and Metallic Suture.—After an experience of five years, covering fourteen successful cases, LENGER (*Journal des Practiciens*, 1894, No. 24, p. 283) recommends the performance of arthrotomy, with suture of the fragments, in the treatment of fracture of the patella. He details the steps of the operation as follows: The knee is made aseptic by means of washing with soap and carbolized water; and is then rubbed with ether. An incision is made in front of the patella, the articular cavity is irrigated with a 2.5 per cent. solution of carbolic acid, and drainage is provided for in the most dependent situation. At least two holes are bored in each fragment, and through these strong silver sutures are passed, and approximation effected by twisting. The periosteum and the fibrous tissues are sutured with silk thread, and the parts are again irrigated with a 2.5 per cent. solution of carbolic acid. The cutaneous wound is sutured with silver wire, and the dressing is completed with iodoform-gauze and absorbent cotton. The extremity is placed in a position of extension, and immobilized in a splint. The treatment occupies four weeks. The drainage-tube may be removed at the end of a week. The union is believed to be osseous. The only contra-indications to this method of treatment are furnished by nephritis, diabetes, obesity, and cachectic conditions.

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CRANIOTOMY, CESAREAN SECTION, AND SYMPHYSIOTOMY, FAIRLY CONSIDERED AS OBSTETRIC EXPEDIENTS.

1. *Craniotomy* is a very ancient operation, so old that we can form no idea when it began. It appears to have suggested itself to Arabian and Japanese obstetricians many centuries ago, as a means of saving the life of the mother, at the expense of that of the child, an excuse for which lay in the fact that there was no other alternative method of delivery. So the head was opened and emptied, a hook or hooked forceps applied, and the fetus delivered if practicable, but if not, the mother died undelivered.

The first alternative method was that of the Cesarean operation, introduced in 1498, which enabled the obstetrician to deliver the fetus in cases in which the pelvis was too small to admit of its passage after craniotomy. To save the fetus alive at an additional risk to the mother was scarcely ever thought of, and a resort to the method was rarely decided upon until the woman had been long in labor. The operation was soon regarded as almost an equivalent to a doom of death, and the dread of it, begotten of delay, became a most potent factor in rendering its fatality certain. No one ever sewed up the uterus, and its atony, engendered by muscular fatigue, left an open wound for leakage into the abdominal cavity of a fluid that in nearly all cases produced peritonitis and death. This neglect of the uterine wound is to us unaccountable, and especially as we know that the first man who ventured to sew it up was bitterly censured, although the woman recovered.

The second alternative method was the *free* introduction of the use of the obstetric forceps, in 1733. This instrument is an alternative only to a limited degree in saving the fetus; but within this limit it has enabled the obstetrician to save many children that would otherwise have been sacrificed. It was a great improvement upon the Cesarean delivery of the period, as, the element of fear being absent, there was no incentive to delay in resorting to its application.

2. *The Cesarean operation* of to-day has nothing of the original section left in it, except that the two incisions are in the median line. The first vital improvement was the sewing up of the uterine wound; the second was operating early in labor; the third was the use of anesthetics; the fourth was the adoption of antiseptic treatment before and afterward; and the fifth was the multiple suturing of the uterus in two rows, deep and superficial. The end and aim in this operation for the last fifteen years has been to reduce its mortality, and this has been accomplished to a marvellous degree in certain Continental maternities, notably those of Leipzig, Dresden, and Vienna. The possibilities of the operation are best attained in hospital service, and under operators whose repeated sections under favorable circumstances make terminations in death very exceptional. It is not at all difficult to predict before an operation what will in all probability be its result. This has been done repeatedly, and every favorable prognosis was followed by recovery—a result that is largely due to the prior condition of the woman. Cesarean section, considered in itself, may be regarded as an operation having comparatively little danger. Few men believe this, and some think it an extravagant opinion; but operators like SÄNGER, ZWEIFEL, and LEOPOLD have reason, in their repeated successes, for holding the same view. As one observer in this city has seen eleven women recover in order, it is not to be wondered at that his faith resembles that which PROF. SÄNGER claimed to hold after his first eleven cases had recovered and he had saved all of the children but the first, which was some time dead before delivery.

The general work of a large country like our own has little in it to give encouragement. Private and hospital cases, village and city operations, grouped together cannot be expected to give from 6 to 10 per cent. of mortality. We do not do it, and probably never will. When the improved operation was introduced, men were sanguine of success in anticipation, but their ardor cooled many degrees when the first 8 women died and all of the children were dead but 2, and one of these died in thirty-two hours. The dead fetuses tell the reason of failure. Labors of "thiry-six hours," "three and a half days," "a week," "nine days," and "forty-two hours," give no encouragement to the performance of "*puerperal celio-hysterotomy*." We have had 100 of these operations in the United States since October 1, 1882, and have lost 38 women and 20 children. We know why each of these women died; and death came in but few instances as a natural sequence of the mode of delivery. Obstetricians have a great deal to learn and act up to before the general mortality of our country can be reduced even to 20 per cent. It will be below this in city maternities, but private cases in little towns will keep up the death rate.

In a recent discussion before the London Obstetrical Society an opinion was expressed that the mortality under the Cesarean operation in Great Britain had been reduced to 10 per cent. "in fair cases." Now it is true that Prof. Murdoch Cameron, of Glasgow, did save 27 women out of 30, thereby showing the possibility of the operation in his own country; but where is the statistical evidence that even London has come down as low as 20 per cent?[1] No one, not even the late Dr. Thomas Radford, of Manchester, ever made a thorough search for the unpublished Cesarean cases of Great Britain, such as has been done through correspondence and the distribution of return-blanks in the United States. Such a statistical research has been desired for London alone, but no one has been willing to undertake the labor. These conjectural calculations have no value and teach nothing. Few men know the value of statistics as they do who collect them properly and analyze their teaching after they are chronologically arranged. It is an error to presume that because cases have never been reported they are to be regarded as in all probability unsuccessful. We know well to the contrary, in respect to operations at home and abroad. Many an operator feels much more at home with his knife than with his pen; if asked for a report of a case, however creditable, he fails to respond; if sent a skeleton-blank to fill up, and he sees his report all mapped out and how little trouble it is to give him, he act promptly, and all the points required can be gotten. Statistics are not collected as curiosities; the cases teach how and when to operate for the saving of life, and their study has been the means, as in ovarian cystectomy, of making a highly dangerous operation one of comparatively little gravity.

3. *Symphysiotomy.* We have sometimes wished that this operation had no early history, and that it had been introduced at the time of its revival in 1866, because of the fact that this same early history lives in obstetric text-books as an obstacle to its being accepted as a legitimate and valuable alternative to the destructive operation of craniotomy in cases of moderate pelvic obstruction. It matters not that 55 Italian symphysiotomies (1886–1893) have saved 53 women and 48 children, for there stand Baudelocque and the old writers to show its fatality; its capabilities for maiming the subject; its unphilosophic character; and how little can be gained by it, in the true conjugate of the pelvis. Case after case is appealed to, to show how the forceps failed to deliver the head until after the symphysis was opened; when the same instrument availed to deliver a living fetus. Philosophic or unphilosophic, the proof stands unquestioned. Prof. Morisani, of Naples, thought that his experiments demonstrated that this operation had a philosophic basis, and he therefore reintroduced it. The Cesarean operation in Naples had cost the lives of 25 out of 27 women, although all of the children were delivered alive. Mark the difference: the first 27 pubic sections saved 20 women, and lost 5 children. Thus much for the operation prior to the change effected by antisepsis.

They tell us in London that this operation has a higher rate of mortality than the Cesarean section, which may be true or may not be, according to the way the comparison is made. It is not correct, if we compare Leipzig with Naples; but is so, if the Cesarean work of Leipzig is compared with the symphysiotomies of Paris. It is very far from true, if we make the comparison in the United States. The Cesarean record shows a mortality of 38 per

[1] We have just learned that London, from Nov. 1, 1886, to Nov. 1, 1893, lost 9 women and 5 children as the result of 22 operations.

cent. There have now been 44 symphysiotomies under asepsis, with the following results: deaths of women, 5; children dead before operation, 4; died under operation, 4; died after operation, 4=12; women lost after last 28 operations, only 2; lost after the last 37 improved Cesarean, 9, or nearly $3\frac{1}{2}$ times as many under the fairest possible comparison, *i. e.*, $7\frac{1}{7}$ per cent. of death against $24\frac{1}{3}$ per cent.

Symphysiotomy can only to a very limited extent be a substitute for the Cesarean operation, and properly comes between the domain of the forceps and Cesarean section, just covering the ground where craniotomy has been most abundantly resorted to, and can be employed with the least possible degree of risk. Certain German obstetricians use the forceps in such cases, and failing with this form of traction, perforate the head and reapply the instrument, claiming that their hospital records show no deaths of mothers in these cases. This is largely the practice in Great Britain now, and was at one time the universal expedient in American practice. But the introduction of symphysiotomy, and its diminishing mortality, has set the medical world to thinking upon the question of the right of the fetus *in utero* to be saved, even if in securing it the mother has to run a small additional risk. At one period the Cesarean section was the expedient to be avoided if possible, because of its death-rate, and men taxed their brains to contrive instruments that would extract a mutilated fetus through a conjugate, down to $1\frac{1}{2}$ inches. But the fact that operating in this way, under a measurement of "$2\frac{1}{4}$ inches or less," was shown to destroy the life of one woman in five, checked the use of the cranioclast, and it has now been largely retired, since the introduction of the improved Cesarean section from Leipzig and Dresden.

Symphysiotomy is now being performed in many Continental countries, and there were 84 operations with 10 deaths in all localities in 1892, in contrast with 12 in Naples in 1891, with no death. England has made two trials, Ireland one, and Canada three. The United States stands second to Italy in successful results, and there are about as many operations now performed in Philadelphia as in Naples. When we look back four decades we see that great changes have taken place, and are now in progress, in regard to the propriety of fetal destruction; and old obstetricians, who at one time would not have hesitated to perforate the skull of a living fetus, have come to think that craniotomy should be avoided, as there are alternatives for saving the child.

EDITORIAL COMMENTS.

Cardiac Asthenia or Heart exhaustion.—Death sometimes occurs without more obvious cause than heart-failure. Such an event may be brought about as the result of inflammatory or degenerative changes in the myocardium, or possibly through involvement of the cardiac nervous apparatus. Further, a heart may be intrinsically weak, the myocardium participating in the lack of tone that affects the muscular system generally. In an address recently delivered before the Medical Classes of the University of Pennsylvania, DR. J. M. DA COSTA[1] made an important contribution to this hitherto rather unelaborated subject. In this paper Dr. Da Costa deals with the feeble heart resulting from enervation or asthenia, on the one hand, and with that due to atonicity or intrinsic muscular weakness, on the other hand. In the first of these states, which usually develops in the sequence of nervous strain, the action of the heart is feeble and accelerated; the pulse is small and compressible; there is a sense of uneasiness in the precordium, but rarely actual pain; the extremities are often cold; the temperature is likely to be subnormal. The capillary circulation is poor and the skin pale, though occasionally injected or flushed. The cardiac impulse is feeble. The area of percussion-dulness is unaltered. The rhythm of the heart is rarely disturbed. The first sound is short, feeble, indistinct, lacking in volume, obscure; the second unchanged. The breathing is conspicuously unaltered, although there may be a sense of oppression. Insomnia may be complained of; depression of spirits is common. The patient is obliged to stay in bed; attempts to rise produce a sense of swooning and a vanishing pulse; or there may be actual syncope. The prognosis is favorable, though the affection pursues a protracted course. Therapeutically rest in bed is the primary indication. When the patient is able to sit up nothing does so much good as graduated shower-baths. Massage, too, may be employed, but it is more useful a little later. Swedish movements may then also be recommended, together with carefully regulated exercise, such as walking, gentle horseback-riding, or light gymnastics. The food should be most nutritious and taken as frequently and in as large quantities as the digestion will tolerate; stimulants must often be resorted to. Errors of secretion and excretion must obviously be corrected. Of drugs, strychnin, in doses of gr. $\frac{1}{30}$, three times a day, has proved the most useful; next in value is arsenic; of heart-tonics digitalis is the best; caffein and cocain are useful; iron is not indicated unless anemia be present; nitroglycerin is of no avail, unless there be cardiac pain, or unless used in conjunction with digitalis. Bromids, valerian, and opium are to be reserved to meet special indications. The second form of weak heart presents, in addition to the symptoms detailed, shortness of breath, especially on exertion, and edema of the ankles and insteps. The first sound of the heart is even more indistinct and ill-defined; duplication of either sound and functional dynamic apical murmurs are more common. The influences that lead up to this condition are not at all clear; the changes if any, that take place are not evident. The prognosis is less favorable than in cases of simple cardiac asthenia. The

[1] "Cardiac Asthenia or Heart-exhaustion," American Journal of the Medical Sciences, April, 1894, p. 361.

treatment for the two conditions is much the same. It is probable that in some cases the two forms of cardiac weakness here discussed are associated.

The Proper Sphere of Women's Work.—In a recent address Sir Dyce Duckworth claims that the experience arising from a long period of practice in the medical profession renders its owner peculiarly well-fitted to form an opinion on the proper sphere of women's work. Briefly, he takes up the position that the fixed sexual differences between women and men make it impossible for the former to expose themselves to the training and influences suitable to the latter, without materially and disastrously affecting the welfare and happiness of the human race. Speaking as a physician, he maintains that the physical strength and energy of all but exceptional married women find ample scope for their exercise in the household and family work, which can be efficiently performed by none other than themselves, and asks where are the "wonderful women" who, after properly discharging those duties, can yet find time and energy to compete with men in the pursuit of business or public work? To those who are without such duties or find them insufficient, he would advise the adoption of interesting and suitable outside work, but would avoid politics, public work of most descriptions, the professions, and above all that of medicine, as being unsuited to the very nature of the female sex.

This opinion of a well-qualified observer is, however, contradicted by the opinion of thousands of better-qualified American physicians. We say better-qualified, meaning thereby more experienced in the special matter. Thousands of women as well as men find "the welfare and happiness of the human race" affected for good by the work of women in medicine. Entirely too much has been made of the old bogey of the "fixed sexual differences between women and men." It is hardly good logic or good morals to put a person in a dark room for years and then blame the person for paleness and weakess. The position of women has outfitted them with some lack of "physical strength and energy," but they should hardly be blamed for it, and the girls even in England seem to be able to outdo the boys in the contests for university honors, and with us there are many excellent and successful women physicians.

Attenuated Quackery.—We have received from the —— Surgical Instrument Co., a letter, a pamphlet, and an instrument. The letter asks us to notice the instrument, which is "not advertised as a cure-all," but "comes nearer to being one than any of the thousand things that are so advertised." The pamphlet is a reprint of Dr. ——'s paper in *The Medical* ——, describing the instrument, together with price-list of instrument and medicine to be used with it.

The instrument ("patent applied for") appears to be a good device for applying well-known principles long in use and often written of by well-known physicians of Philadelphia and elsewhere. The method of its advertisers comes so near to quackery that it takes an expert casuist to draw the line.

We do not suppose that Dr. —— is responsible for the doings of the —— Surgical Instrument Co., but we would advise him in the interest of his good name and his deservedly high reputation to insist on a modification of the pamphlets, circulars, etc., furnished with his instruments.

If the code-revisers have their way, and patenting of medical and surgical instruments and remedies is allowed, it will be a sorry day for the medical profession. The narrow line between the doings of the —— Instrument Co. and quackery would soon be overstepped, and the result would be degrading to all concerned.

Protracted Anuria.—We have to add another case to those already recorded (see THE NEWS, November 18, 1893, p. 582) in which functions ordinarily viewed as vital have remained for many days in abeyance. KAEFER (*Berliner klinische Wochenschr.*, 1894, No. 13, p. 319) reports the case of a man, sixty-eight years old, and previously in excellent health, who came under observation after not having passed urine for six days. He suffered no discomfort and, but for the consciousness of the failure of the renal function, would have had no concern. It was only after having been struck by the fact that he had passed no urine for more than twenty-four hours that the man found, on attempting to do so, that he was unable to evacuate a drop. There was a little abdominal pain, but there had been no attack of colic. On the eighth day, however, such an attack did occur, after which for a time the secretion of urine was resumed; the fluid was found to contain pus-corpuscles and epithelial cells, but no urates. A short time later a second attack of anuria occurred, lasting for five days, when death took place amid the manifestations of pulmonary edema. The post-mortem examination disclosed the presence of obstruction of both ureters by calculi, with beginning hydronephrosis on the left side.

SOCIETY PROCEEDINGS.

PHILADELPHIA ACADEMY OF SURGERY.

Meeting March 5, 1894.

THE PRESIDENT, DR. WILLIAM HUNT, IN THE CHAIR.

(Continued from page 473.)

CASE II. *Large strangulated inguinal hernia; sloughing intestine; radical operation, with removal of testicle; recovery.*—Jacob B., aged forty-three years, was brought to me by his physician, Dr. James Robinson, on March 6, 1893, and admitted to the Polyclinic Hospital. He stated that he had had a large tumor in the left scrotum from childhood, and could not remember when it had originated. By manipulation at times he thought that it had become somewhat smaller. It never had given him any annoyance.

On March 1st, while in apparently perfect health, he drank a quantity of ice-water, which induced vomiting, during which he felt a sensation of something in the left inguinal region "giving way." From this time he continued to vomit everything taken, and to experience extreme nausea. The bowels also ceased to move. The tumor became more and more painful and swollen. He continued in this condition five days, and then summoned Dr. Robinson, who applied taxis for thirty mitutes without making any impression on the mass. On the sixth day he walked a number of squares to the hospital.

Upon admission I found a tumor the size of a large cocoanut occupying the left scrotum and inguinal canal. The testicle was below the general mass, and could be outlined as distinct from it. The whole tumor was very tender and somewhat edematous. Deep fluctuation was marked. No percussion-resonance or succussion could be elicited. A very resisting mass occupied the inguinal canal. The bowels had not moved for six days. There was constant fecal vomiting. The general condition was fair.

A diagnosis of chronic hernia of the omentum, with acute entanglement of a portion of the intestine, together with hydrocele, of the hernial sac, was made, and immediate operation insisted upon.

After preliminary cleansing and anesthesia, without waiting to make prolonged taxis, which was clearly prohibited by the long duration of the strangulation (as the subsequent history clearly demonstrated), a five-inch incision was made in the line of the inguinal canal and scrotum. The cellular tissues were edematous and had some odor of decomposition. The sac was exceedingly thick and highly discolored, as if about to break down. It was freely incised, and half a pint of dark, turbid fluid of putrefactive odor escaped. The sac contained a large mass of hypertrophied omentum of the character so frequently found in omental hernias; it was adherent by firmly organized attachments to most of the sac-wall. It was purple in color, intensely congested, and very edematous. The whole was stripped from its adhesions and carefully spread out, whereupon a portion of small intestine came into view that had been entirely wrapped up in the folds of the omentum. This again illustrates the extreme care that is always so necessary in handling the contents of a hernia; for it would have been exceedingly easy to have ligated off the omentum and bowel together in this case, and to have returned the stump to the abdomen, thus insuring a fatal issue. A finger passed into the inguinal canal discovered a very tight constriction at the internal ring, which was freely divided upward. The omentum could now be pulled down with ease until entirely healthy portions appeared, when it was ligated off in two bundles by transfixion, and the stump returned to the cavity and fixed immediately behind the internal ring by bringing both of the ligature-ends through different portions of the muscular wall, and then tying them down, as suggested by Macewen for making a protecting pad of the sac in his radical operation. The prolapsed intestine could now be freely inspected.

Upon the free margin was a gangrenous spot, one-half inch in diameter, and which appeared to be in imminent danger of rupture. The remaining portions of intestine were almost black from venous stasis, but were not actually sloughing. The sloughing portion was buried under healthy peritoneum by means of Lembert sutures, buckled into the lumen of the bowel, as it were, just as if perforation had taken place. Fortunately, this procedure did not too much diminish the lumen of the bowel; and by the time that it was completed all excepting the sloughing portions of the intestine had, under hot irrigation, resumed the beautiful pink tint of returning circulation. The bowel was then returned to the abdominal cavity.

After a very difficult dissection the sac was freed of its attachments to the scrotal, testicular, and cordal tissues, and ligated off in two sections at the internal ring. The stump of omentum was next fixed behind the ring as described. Attention was now turned to the testicle and cord. These structures were edematous, had the general foul odor of all the surroundings, and, in spite of careful separation, had been considerably injured by the dissection and other manipulations. It was considered that leaving such structures in a wound already gravely threatened with suppuration, if not sloughing, was an unjustifiable risk to which to subject the patient, as the testicle, under these circumstances, was likely to break down and slough, with accompanying dissecting suppuration, and especially was it desirable to secure for this hard-working man a radical cure, if possible. Hence the cord was ligated at the internal ring most carefully by a transfixing double ligature of silk, and also returned to the abdomen. This permitted a careful and complete closure of the internal ring and the whole inguinal canal by buried silkworm-gut sutures placed about three-eighths of an inch apart. A small rubber drain was placed in the lower portion of the scrotal wound, but none in the upper portion, and the skin-margins were approximated by silk sutures.

Excepting a small amount of suppuration in the scrotum, the entire wound healed by primary intent. The drain was removed on the third day. The bowels moved within twenty-four hours spontaneously, and naturally each day thereafter. There were some small clots of blood in the first stool, but none subsequently. The man was given absolutely nothing by the mouth for thirty hours subsequently to the operation; but rectal enemata of warm water were frequently administered, and this prevented thirst. Then liquid diet was started and full diet gradually resumed. The man was kept in bed three weeks, and resumed his duties as an hotel-waiter in five weeks. He was instructed not to wear a truss.

I last saw this man on November 2, 1893. There was no sign of return of the hernia. The cicatrix was sound. He has been working hard at his occupation ever since the operation, has not worn a support, and expressed himself as stronger and better in every way than he had been for years.

Case III. *Strangulated congenital inguinal hernia; radical operation, with removal of undescended testicle; recovery.*—Irvin B., aged nineteen years, was admitted to the Polyclinic Hospital, May 9, 1893. He had enjoyed excellent health all his life, but had always had a "come-and-go" tumor in the right scrotum, and had never been able to distinguish a testicle upon that side. The opposite testicle was large and firm. The tumor could always be reduced with ease, and likewise disappeared whenever he laid down. It was painless. He had never worn a truss.

On the morning of May 8th, upon slight straining while at his work of tile-setting, he felt a painful and unusual sensation in the right side of the scrotum, and went home, nauseated and in great suffering. He then discovered that a tumor much larger than usual was present, and that it was tender and irreducible. The bowels moved a few hours subsequently.

On May 9th he applied to me for relief, and I insisted upon his entering a hospital. No movement of the

bowels had taken place except shortly after strangulation. There was much nausea and anorexia, but no actual vomiting had taken place. The belly was somewhat distended, but the general condition was good. In the right inguinal region was a tumor of considerable proportions and very sensitive. Fluctuation was very marked in the dependent portion of the scrotum. There was no succussion and no percussion-resonance. The inguinal canal was tense and occupied by a solid mass. The testicle could not be defined.

Upon admission the man was given a bath, and, consent to removal of the undescended testicle having been secured, immediately etherized. Taxis was then made for five minutes, and failed. Immediately upon failure of taxis a long incision was made over the inguinal canal and tumor and carried down through the tissues until a thin-walled sac was freely exposed. This was also incised, and four ounces of brownish serum escaped, disclosing a web of congested omentum and about four inches of small intestine. The omentum was inky-black, the intestine not quite so much injected. A very small and tight constriction was found at the internal ring. This was divided with a Cooper hernia-knife with considerable difficulty, owing to the high location of the ring and to the intense constriction—bowel as well as sac overlapping on all sides. A small rent in the serous covering of the bowel resulted, but was immediately repaired with half a dozen Lembert sutures. I have since learned to cut the ring from above in all difficult cases, and thus to avoid the risk of wounding the bowel or other structures passing through the ring. As a division of the ring and roof of the canal from above is now an established procedure when making radical cures for hernia in this situation, division of the ring from below may go entirely out of fashion, excepting in desperate cases or in the very aged or feeble, in whom radical operations must be ruled out, owing to the increased danger to life inseparable from prolonged operative manipulation.

As soon as the constriction was relieved the bowel and omentum at once resumed their normal color and circulation. The omentum was ligated off in portions and the stump returned to the abdominal cavity. More intestine was then pulled down, as usual, but no further constriction was found, and it was also returned to the cavity.

In the sac-wall at the position of the external abdominal ring was found an undeveloped, undescended testicle, about half an inch long and three-eighths of an inch wide. This was dissected out with a portion of the sac, the pedicle securely ligated, the testicle cut away, and the stump returned to the peritoneal cavity. It could have been reduced with the sac, but could not have been returned to the scrotum with a cord manufactured out of a portion of the sac-wall including the testicular vessels and vas deferens. When I considered the uselessness of the organ in its undeveloped condition, its well-known propensity to degenerations and other diseased conditions, and, moreover, as I had secured the man's consent to its removal, and could make so much better a radical operation with no structure traversing the rings or inguinal canal, it appeared more than justifiable to sacrifice the organ, especially as its fellow was in perfect condition. The sac (containing the pedicle of the cord) was next dissected free from its surroundings up to and a little within the internal ring. Here it was puckered up after the method of Macewen with a thread and needle and fixed just behind the internal ring, to act as a pad to protect that region from the possible return of a portion of gut. The internal ring and the inguinal canal were then completely obliterated by silk sutures and the skin likewise sutured by silkworm-gut. No drainage was employed. The bowels were moved by fractional doses of calomel and podophyllin within twenty-four hours, and in three days he was eating semi-solid diet. The wound healed throughout by primary union. He was kept upon his back for three weeks and resumed his occupation in five weeks. No truss was prescribed.

I have seen this patient recently—almost one year since the operation—and found the cicatrix sound, with no sign of return of hernia.

Dr. John H. Packard: I wish simply to refer to one practical point in the treatment of these cases, and that is the use of swimming drawers to hold the dressings in place. It is difficult to apply a bandage that will keep its place perfectly, and I have found this method to answer an exceedingly good purpose after various operations in the pelvic region.

Dr. John B. Deaver: In this connection I should like to state that Bassini reported one year ago 560 operations, with 15 relapses and no deaths.

There are only two points which I wish to mention One is the kangaroo tendon now used by most surgeons The second is enveloping in a plaster-of-Paris bandage. A great deal of the perfect asepsis is due to the latter.

Dr. Orville Horwitz exhibited an improved Wheelhouse staff.

CORRESPONDENCE.

LONDON LETTER.

Ventro-fixation of the Uterus—The Bruits of Chlorosis—A Method of Examining the Bladder in Patients with Enlarged Prostate—Raynaud's Disease—Sulphur as an Antiseptic.

Dr. Sinclair reports twelve cases of ventro-fixation of the uterus, or hysteropexy, as it is called in France, for the relief of retroflexion. They were all successful, and in two cases pregnancy afterward occurred without untoward result. Sinclair recommends that the fundus of the uterus should be seized exactly in the middle line by a small volsella, by which it can be drawn up and held in any position, which proceeding he thinks is much better than the use of a lever inside. The vesico-uterine fold is first obliterated by two rows of catgut sutures passed through the parietal peritoneum and the peritoneum of the uterus. Higher up, near the origin of the broad ligament, the uterus is fixed to the parietal peritoneum, the permanent sutures entering the uterine tissue but only passing through the peritoneum on the parietal side. Finally, two silk sutures are passed through the whole thickness of the parietes, through a portion of the uterine tissue on the anterior surface of the uterus and out again through the parietes. (These

are only temporary supports and are removed on the third day.) The abdominal wound is closed by silk sutures in the ordinary way. There were no deaths after the operation and no cause for anxiety. The most disagreeable results have been the occurrence of sinuses produced by the suturing material and of ventral hernia in some cases, especially those in which pregnancy took place. The operation seemed in every case to give great relief from the pain and discomfort for the removal of which it was performed, and Dr. Sinclair appears to think that (*a*) the danger of the operation is almost *une quantité négligeable*; (*b*) when efficiently performed it is a permanent cure for the troubles caused by chronic retroflexion with adhesions or inflammatory affections of the tubes and ovaries; (*c*) no unusual phenomena are observable during pregnancy or parturition occurring after the operation; (*d*) bladder-troubles are quite the exception; (*e*) ventral hernia occurs at the site of the cicatrix in a certain number of cases; (*f*) after making full allowance for the element of risk and the incidental drawbacks, the operation of ventro-fixation is not only justifiable, but is indicated in a certain limited class of cases of retroflexion of the uterus with complications.

Dr. Frederick Coley draws attention again to the venerable questions, which have been discussed so often and from so many points of view, as to the meaning of the vascular bruits heard in cases of chlorosis. What is of importance, however, is that he is able to assert that, contrary to what is so often taught, a bruit is not at all uncommonly discoverable in chlorosis not only at the apex of the heart but extending outward to the axilla and to the angle of the scapula. Among 400 consecutive cases of chlorosis he found 278 which presented a bruit at the apex and 123 having a bruit at the angle of the scapula also. It is well to remember that the bruits connected with chlorosis alter much with change of position, and that while one at the apex and in the axilla can often be discovered only when the patient is lying down, a bruit at the angle of the scapula is never so heard unless it is also audible in the upright position. No doubt these abnormal sounds are the result of dilatation of the left ventricle; and when questions arise as to whether a given bruit is due to organic disease or to the dilatation common in chlorosis, it is worth remembering that the two conditions may exist together and that under such circumstances it is most important not to overlook the chlorosis, for the intercurrence of this condition, itself sufficient to cause dilatation, is the thing of all others most likely to lead to failure of compensation in a case of organic heart-disease.

Mr. Hurry Fenwick has described to the Medical Society a method of examining the bladder which he finds useful in those very troublesome cases in which symptoms of stone exist along with a prostate so large as to prevent a proper investigation of the pouch behind it. Of course, in such cases, a stone may chance to be felt at once, but it is extremely difficult to assure oneself that no stone exists when it shows no sign. Mr. Hurry Fenwick fills the bladder, punctures with a trocar above the pubes, and then introducing a sound or an electric cystoscope through the canula is able to thoroughly investigate this pouch which has so often been a cause of embarrassment. If on examination anything should be found making it desirable to open the bladder more completely, it is easy to make the canula a guide for the incision, and Mr. Fenwick showed a calculus which he had in this way discovered and removed from its attachment to the posterior surface of the prostate; removing at the same time the projecting portion of the prostate itself.

After giving the clinical history of a case of Raynaud's disease, Dr. Hale White discusses its pathology. It is clear at once that the condition which we see is due to a constriction of the minute vessels of the affected part. The larger vessels are found beating quite near the disease, and after death are found free from embolism or disease. In discussing its origin, then, we may assume that the local syncope and the local asphyxia, which in some cases lead to local death, are the result of spasm of the minute vessels. That drives one at once to the nervous system as the cause, or, at any rate, the route by which the spasm is set up. And, as a fact, peripheral neuritis has in a certain number of cases been shown to exist. It seems, however, by no means certain that this neuritis was not set up by the changes induced by the vascular derangement, and that it was not in fact the result rather than the cause of the disease. Then we must remember that vasomotor changes can be produced by diseases of other portions of the nervous system; in fact, spasm is more suggestive of either central disease or reflex irritation than it is of peripheral neuritis, and there is the suggestive fact that many of the cases of Raynaud's disease occur in hysteric and insane subjects. We should then look upon it as a symptom indicative of disease affecting some portion of the nervous vasomotor system, shading off, quite imperceptibly, into the cold dead fingers to which we are all liable. This puts it into alliance with erythromelalgia, a vasomotor neurosis in which the vessels dilate instead of contracting, and also with cases of urticaria and local mottlings. This view warns us not to expect to find an organic cause for the disease. We can no more hope always to find an organic explanation for paroxysmal vasomotor attacks leading to blueness of the fingers, than always to find an organic explanation for paroxysmal epileptic fits.

Sulphur is no doubt in some surroundings a very harmless substance. It evidently, however, when in combination with oxygen or hydrogen, produces compounds which act strongly as bactericides, and Mr. Arbuthnot Lane has during recent months used it largely at Guy's Hospital as an antiseptic. Innocuous as it may seem, and as it actually is to skin and mucous membrane, it produces, in contact with recently incised tissues, compounds which are powerfully caustic in their action, and must, therefore, be used with caution. Perhaps the best plan is to make it into an emulsion with glycerin, by means of which its action is rendered less violent and more generally diffused. If sulphur is used in any quantity it must be removed in a day or two, and the wound irrigated. Cases of tuberculous disease in which there is doubt whether the whole of the infected tissue has been removed, and cases of injury in which dirt has been deeply imbedded, would seem to be the typical cases for its employment, in both of which, from its slow conversion into substances fatal to organisms, it acts as a continuously acting reservoir of bactericidal material. It may also be used as an application to lupus, carcinomatous or sarcomatous ulcerations, or in cases of ulcerative stomatitis.

The fact that during its presence in a wound H_2S is formed must be borne in mind, otherwise the smell might give rise to a false impression that septic decomposition was in progress.

ENUCLEATION OF THE UTERUS.

To the Editor of The Medical News,

Sir: In the issue of February 10, 1894, of your esteemed journal, which I saw only yesterday, I find an article by Dr. Robert Reyburn, on "Vaginal Hysterectomy for Carcinoma of the Uterus performed by Enucleation without Hemorrhage," which reminds me forcibly of a discussion on the possibility of this operation at a meeting of the New York Obstetrical Society held October 17, 1876 (*Amer. Journ. Obstet.*, vol. x, p. 106). Noeggerath reported a case of vaginal removal of a carcinomatous uterus with a fatal result, and during the discussion the following remarks were made: "Dr. Mundé referred to a case reported by Dr. Alexander Patterson, of Glasgow (*Glasgow Med. Journ.*, 1876), of the successful removal of the whole prolapsed uterus by an operation very similar to that performed by Dr. Noeggerath. Bearing on a case of his own, reported in the *American Journal of Obstetrics* for August, 1872, in which the whole uterus (at least what was left of it, fundus and body) sloughed out after the operation of curetting and applying chromic acid for cancer of the cervix, *Dr. Mundé asked whether, in case of relaxation of the connective tissue attachments between the uterus and the peritoneum it might not be possible to peel the uterus out of its peritoneal envelop without opening the peritoneal cavity.* [Italics new.] Dr. Noeggerath replied that, in certain abnormally relaxed cases it might be possible; in the normal or ordinary condition never. In this opinion Drs. Peaslee and Thomas concurred."

It will thus be seen that the *possibility* of the operation performed by Dr. Reyburn had occurred to me as long as eighteen years ago. But experimenting on the dead uterus showed me that such an enucleation of the body of the uterus from its peritoneal envelop was impossible, and I have placed myself on record elsewhere in regard to this subject. (See an article on "Obscure Pelvic Abscess in Women" in Seguin's *Archives of Medicine*, December, 1880, page 3 of the article.) There, speaking of the existence of cellular tissue between the pelvic organs, I said:

"Spiegelberg says in a clinical lecture that the whole cervical portion of the uterus—that is, the portion of the cervix situated between the reflection of the vagina and the internal os—on all sides except in front, is surrounded by abundant loose connective tissue, and that the retro-uterine peritoneum is not closely attached to the uterus. *Of this I have had occasion to satisfy myself while testing the possibility of enucleating a uterus from its peritoneal envelop through the vagina, as would be indicated in carcinoma of that organ. I found that the peritoneum could very easily be detached from the uterus up to the os internum, but that above it was impossible to separate it except by actual dissection with the knife. In front this detachment was by far less easy than behind and at the sides, owing to the small amount and density of the connective tissue, which, at a spot corresponding to the os internum, is interspersed with muscular fibers and assumes the character of a ligament, whereby the uterus and the bladder are so closely connected as to be almost inseparable.*" [Italics new.]

Unless Dr. Reyburn's case was an unusually favorable one for enucleation, owing to the senile, relaxed condition of the peritoneal envelop of the body and fundus of the uterus (as the Doctor himself admits), I can hardly think it possible to peel off the peritoneum as easily as he describes it to have been done. Indeed, I am inclined to look upon the operation more as a dissecting away of the uterine body from its peritoneal covering than as an enucleation or peeling out. In this respect the operation would not differ so much from the step-by-step excision of the carcinomatous uterus carried out years ago by J. Marion Sims, when often but a shell of the organ was left. I am sure that in a younger woman the division of the vessels leading to the uterus would not have been as bloodless as in Dr. Reyburn's case.

I shall look with interest for further reports of this operation, which, now that it comes from an authentic source, assumes a far more credible aspect than when it was reported from a doubtful and irregular quarter.

Since writing the foregoing my attention has been called to a second article by Dr. Reyburn in The Medical News for February 24th, in which he discusses the question of the priority of the idea and supposed execution of "enucleating" the uterus. It is not my intention to claim any such priority, although I was not aware that *any* operator had ever thus *actually enucleated* the uterus. My object, indeed, is to question the possibility of doing so, on account of the naturally too firm adhesion of the peritoneum to the body of the organ. Dr. Reyburn quotes Langenbeck's case (1813) as the first detailed one of enucleation. But a reference to Langenbeck's description, as quoted by Dr. Reyburn, shows that that operator left a slice of the fundus uteri attached to the peritoneum. Besides, the uterus was prolapsed, that being the reason for its removal, and probably the peritoneal attachment was much loosened. Such loosening does not occur with the uterus *in situ*. The uncertainty of Langenbeck's operation is shown by his thinking he had removed the ovaries when the post-mortem showed that he had not done so. Malgaigne's account of enucleation is apparently theoretic only, as is also that of Récamier. Sauter, of Constance, who in 1822 first removed the uterus *per vaginam*, did so in a manner similar to our present method of vaginal hysterectomy. While abroad in 1868 I accidentally came across an illustrated graduation-thesis by a Dr. von Siebold, a nephew of the celebrated obstetrician Prof. von Siebold, printed in Göttingen in 1827, describing in all its details Sauter's operation. I valued this thesis very highly, both for its historic interest and for the excellent engravings of the operation. But I unfortunately lent it some years ago to a friend whose identity I have forgotten, and it was never returned.

I will say in conclusion that I neither question nor criticise Dr. Reyburn's operation. I merely wish to call attention to the fact that eighteen years ago I had the same idea and found its execution impossible on the dead uterus.

Paul F. Mundé.

20 West Forty-fifth Street, New York,
April 7, 1894.

A CASE OF ARRESTED DEVELOPMENT.

To the Editor of THE MEDICAL NEWS,

SIR: I send you for publication the following statement descriptive of what I consider a very remarkable case of arrested development. The examination was made June 25, 1883. I have not seen the subject for six years, but learn that he is now living in an adjoining county. I was not able to learn at the time of taking the measurements whether or not the mother was subjected to any unusual mental strain during pregnancy.

L. F., of Balltown, Mo., aged fourteen years and six months; weight sixty-eight pounds, height three feet two inches; wore a No. 7 hat. The boy was bright and intelligent. His body was of usual size for his age, and was well developed. The humerus of each side was normal. On the right side, the ulna was three inches and the radius one inch in length. There was an appearance of intra-uterine amputation at the radio-carpal articulation. On the left side, the radius and ulna were three inches in length. The wrist contained four or five imperfectly developed carpal bones. There were two metacarpal bones, viz., those of the thumb and index finger. There were no phalanges for the thumb, but there was a well-developed nail on the end of the metacarpal bone. There was no osseous but only cartilaginous development of the first phalanx of the index finger, which was without a nail. The left femur was seven inches in length; the right femur five and a half inches in length, and was set at a right angle to the pelvis, the knee being on a level with the acetabulum. The tibia and fibula in both legs were well developed, except that on the right side they were about one and a half inches shorter than on the left. The left foot was well developed except the great toe, which was abnormally large. The tarsal bones of the right foot were imperfectly developed, with talipes varus.

The left testicle was down and well developed. The right tunica vaginalis seemed to be perfect, but the testicle was wanting. The child was the second in a family of nine children. The rest are all of average size and well developed.

Respectfully,

J. ROBERT BUCHANAN.

NEVADA, MO.

A PLEA FOR CHAIRS OF THE HISTORY OF MEDICINE IN MEDICAL COLLEGES.

To the Editor of THE MEDICAL NEWS,

SIR: In THE MEDICAL NEWS for March 24, p. 336, under the heading "Medical Progress in Cleveland, Ohio," your correspondent says:

"Professor Kelly presented to the [Cleveland Medical] Society a rare old book—a copy of the work on *Anatomy*, published by Vesalius in 1514, and also one published by Tulf, in Amsterdam, in 1716, entitled *The Century of Observations*."

Vesalius, the Luther of anatomy, was born in the year 1514, at Brussels. His monumental work: *De humani corporis fabrica libri septem*, was published, not by himself but by Oporinus, of Basel, in 1543. Doubtless this is the work of which your correspondent speaks. This, however, was not the earliest of the books of Vesalius, for, in 1537, his *Paraphrasis in nonum librum Rhasae ad Almansorem*, was issued at Basel. His first anatomic book, an epitome of human anatomy, was published in the same city in 1542. It is upon the first work mentioned that the fame of this great man securely rests.

Now a word as to Tulp or Tulpius, *not Tulf*. Born at Amsterdam in 1593, Tulpius was a surgeon of great renown. His face is the most prominent figure in Rembrandt's celebrated painting, *The Lesson in Anatomy*, which hangs in the Hague Gallery. The only one of his books in my library is the *Observationes Medicæ*, published at Amsterdam, by Daniel Elzevir, in 1672. Tulpius died in 1674.

It is unnecessary to state that I have derived much pleasure, as well as some profit, from the works of Vesalius, being the fortunate possessor of two editions of his great *Anatomy*: Basel, 1543, and Leyden, 1725.

I may also be pardoned for expressing the opinion that it is time for the medical schools of America to establish chairs of the History of Medicine, as has been done by many leading schools of the Continent.

Very truly,

JAMES MOORES BALL,

Professor of Ophthalmology and Lecturer on the History of Medicine in Keokuk Medical College, Keokuk, Iowa.

A MONSTROSITY.

To the Editor of THE MEDICAL NEWS,

SIR: On March 19, 1894, I was called to attend Mrs. J. L., in her sixth confinement. Although insane for the last seven years, she has borne three children, two bright, intelligent ones and a third, the subject of this paper. Her physical health has been good; but about two and a half years ago she had to be confined in an asylum until about one year since, when she returned in her usual harmless, insane condition.

This last confinement had just terminated when I arrived at her home and was told by the neighbor in attendance that it had been a breech-delivery. On inspection, the child appeared to be at full term, but was dead, as existence was an impossibility with the anomalies that presented themselves.

The head, shoulders, and arms were perfectly developed. The chest was in shape a sharp ovoid, pointing antero-posteriorly. There was complete ectopia of the heart and all the abdominal and pelvic viscera, the cord, four inches in length, having the placenta attached throughout its entire length. Evidently all the uterine contents had been expelled *en masse*. No semblance of sexual organs could be discovered, there being an absence of the pubic arch. What should have been internal organs were well developed and distinguishable, but the rectum terminated in a blind pouch. From the point of the missing pubic arch the perineum was perfectly smooth, there being no vestige of an anus.

A spina bifida, including the two lower lumbar vertebræ and a portion of the sacrum, gave rise to a tumor as large as an ordinary orange. Complete double equinovarus of the feet existed, and the legs were crossed tailor-fashion and could scarcely be made to assume any other position. The big toe projected from the left foot at a right angle like the thumb of a hand. The entire weight was six pounds. WILLIAM W. PENNELL.

FREDERICKTOWN, OHIO.

A SYMPHYSIOTOMY.

To the Editor of THE MEDICAL NEWS,

SIR: The following case of symphysiotomy has so far not been reported:

I operated on Mrs. M., August 28, 1893, after the recognized method, and extracted a fetus, alive, weighing fifteen and one-half pounds. The child lived eight days, dying, not as a result of the operation, but from severe diarrhea, from which, indeed, all of the inmates of the house suffered at the same time.

The great distention of the parts beneath the symphysis caused a laceration, beginning at the left side of the meatus urinarius, extending backward along that side of the urethra, and involving the bladder. This laceration was subsequently repaired. The patient is now well.

I. WOTHERSPOON.

SEATTLE, WASHINGTON.

NEWS ITEMS.

The International Sanitary Conference, recently held at Paris, after having been in session for nine weeks, formulated conclusions which were formally agreed to by all of the participants except the representatives of Turkey and the United States. The Conference divided its labors into three branches. The first had to do with the whole question of the Mecca pilgrimage both from the East and from the Mediterranean, and it was dealt with by a "Red Sea Committee." The idea was to carry out such regulations at ports of departure, during the voyage, and on arrival in the Hedjaz, as would prevent any cholera reaching the Holy Places either from India and the Dutch Indies on the one hand, or from the basin of the Mediterranean whenever that disease prevailed in the west. Great Britain and India have willingly consented to have all intending pilgrims subjected to medical examination before starting; to maintain them under medical supervision between Indian ports and Aden, and to report the result at the latter place, where any infected vessel would be adequately dealt with; to insist on having a properly qualified medical man on board every pilgrim vessel; to increase the space allotted to pilgrims on board; and to enforce very substantial fines for any breach of a large number of regulations affecting the voyage. In return for this they claimed a diminution of restrictions in the Red Sea, and they condemned in no very measured terms the cruel and evil results following the quarantine imposed on pilgrims in the island of Camaran before disembarking at Jeddah. The result has been a decision of the Conference calling upon the Turkish Government to discontinue putting healthy vessels into quarantine, and admitting for the future only a short detention of forty-eight hours in order to examine the pilgrims and disinfect their personal effects. The Turkish Government has also undertaken to erect decent buildings on the island for the reception of the pilgrims, and also to arrange for an improved water-supply and better sanitary arrangements. Much the same arrangements have been made as to pilgrims reaching the Red Sea from the north, and the Turkish delegates have also assured the Conference that measures are now being adopted to improve the sanitary conditions of Jeddah and Mecca.

The second branch of the work of the Conference was prepared by a committee called the "Persian Gulf Committee." It proposed to transfer from Bassorah on the Euphrates to Fao at the mouth of the Shat-el-Arab, the principal quarantine-station for the Gulf, and to carry out there a system of inspection and detention under observation much on the lines of the arrangements laid down in the Dresden Convention. It was also intended to establish at different points along the Gulf a series of sanitary stations. The British and Indian delegates all along declared that this was not a route by which cholera was so likely to travel as to justify a serious hindrance to commerce; and since the scheme involved in addition a number of territorial and other allied questions, the British delegation have refused to accept the decisions of the Conference on this subject.

The third branch of the work was undertaken by a committee of "ways and means." It has decided what the Turkish Government is bound to do in return for the almost endless taxes it imposes on the pilgrims; it has set out how the Council of Constantinople should spend some of its receipts; and, above all, it has come to an almost unanimous decision that a new body is to be formed within the Council of Constantinople to administer and carry out the terms of the Convention. No country is to be represented in this body unless it has accepted the terms of the Venice, Dresden, and Paris Conventions, and thus there will be elimination of those representatives who are delegated by quarantining countries. A period of one year will elapse before the final ratification of the agreement.—*Lancet*, April 7, 1894, p. 898.

Surgical Section of the College of Physicians.—At the next meeting of the Section, to be held on Friday, May 11th, at 8 P.M., in addition to other interesting material, Dr. J. William White will read an elaborate essay on "Appendicitis." Dr. Robert F. Weir, of New York, will open the surgical and Dr. William Pepper the medical discussion, which will be continued by Drs. William W. Keen, John H. Musser, Thomas G. Morton, S. Solis-Cohen, John B. Roberts, De Forest Willard, Harrison Allen, and others.

Cholera has again made its appearance in various parts of Europe. On April 25th there were reported at Lisbon 225 fresh cases of mild type; on April 26th, 87 cases; on April 28th, 128 cases; on April 29th, 45 cases; on April 30th, 26 cases. The disease prevails also in East Galicia, in parts of Russia, and in France. It is announced that the Russian Government has erected five sanitary sations on the Austrian frontier, owing to the prevalence of cholera.

The Medical Profession in Russia.—There are said to be 18,334 practising physicians throughout the Russian empire, among a population of 110,000,000, a bout 1:6000. In the cities and larger towns the proportion is about 1:2700, while in the smaller towns and villages it is about 1:30,000, and in some of the more remote provinces it is said to be not more than 1:120,000 inhabitants.

Dr. Ludwig Pfeiffer, of Munich, has been made Professor of Hygiene in the University of Rostock.

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ORIGINAL ARTICLES.

SOME PRACTICAL POINTS IN THE TREATMENT OF DIPHTHERIA BY CALOMEL-FUMIGATIONS.[1]

BY DILLON BROWN, M.D.,
ADJUNCT PROFESSOR OF DISEASES OF CHILDREN, NEW YORK POLYCLINIC.

WHEN the true cause of diphtheria was recognized, although the constitutional treatment remained an important adjunct in counteracting the poisoning from the absorption of the toxic products of the bacilli which are present in this disease, the local treatment immediately assumed the more prominent position, and this was especially true of laryngeal diphtheria, for in the majority of these cases the danger is not from sepsis, but from the mechanical obstruction due to the presence of membrane in the larynx or the bronchi. Therefore the indications for treatment are very clear: (*a*) Destroy the bacilli and other germs which are producing the disease. (*b*) Prevent the extension of the infection by protecting any lesions which may be present in the neighboring mucous membrane, and by putting the patient in such good condition with fresh air, sunlight, good, nourishing food, and alcohol that the soil will be unfavorable for the development of the germs.

There is no mode of treatment for laryngeal disease which fulfils these indications as well as the inhalation of the fumes of subliming calomel, for not only do the fumes reach the site of the disease and destroy the germs, but they prevent all accidental lesions from being infected by protecting them with a deposit of calomel. This method has the additional advantage of preventing the sick-room from becoming saturated with the contagion, and thus being a source of the spread of the disease and of reinfection of the patient.

It is undoubtedly the best and most practical method at our command, and the credit for its conception and application is due to Dr. Job Corbin, of Brooklyn, who read his first communication on this subject before the Medical Society of the County of Kings on the evening of Tuesday, July 19, 1881, and which was published in the *Proceedings* of this Society for 1881, vol. vi, p. 153, under the title "Mercurial Fumigations in Diphtheria." Four cases are reported, all of which recovered, one after a tracheotomy and three without operative interference. The first case was treated in November, 1874, and the black oxid of mercury was used in the form of fumigation, but in all the other cases calomel was used, a half-dram every two hours. The only other published papers on this subject are by Dr. Corbin, in the *New York Medical Journal* for March 10, 1888; by Dr. George McNaughton, in *Gaillard's Medical Journal* for 1889, vol. xlviii, p. 64; Dr. George E. Law, in the *Brooklyn Medical Journal* for 1890, vol. iv, p. 525; and Drs. McNaughton and Maddren, in the *Brooklyn Medical Journal* for 1893, vol. viii, p. 457.

Since its systematic use was begun in my own practice (November, 1890) the results have greatly improved, not only in the number of recoveries after operative interference, but in the number of recoveries without intubation or tracheotomy.

This is well shown by the following summary of my cases of laryngeal diphtheria to date (March 20, 1894):

PREVIOUS TO NOVEMBER, 1890.

CASES.	
358	Intubation; no fumigations. 101, or 28.2 per cent., recovered.
44	No intubation; no fumigations. All recovered.
16	Died before my arrival.
10	Refused operation and died.
8	Died of sepsis with only slight obstruction.

SINCE NOVEMBER, 1890.

75	Intubation; no fumigations. 20, or 27 per cent., recovered.
218	Intubation; fumigations. 87, or 39.9 per cent., recovered.
6	No intubation; no fumigations. All recovered.
32	No intubation; fumigations. All recovered.
16	Died before my arrival.
9	Refused operation and died.
7	Died of sepsis with only very slight obstruction.
799	Of which 290, or 36.3 per cent., recovered.

Excluding those cases that died before my arrival, those that refused operation, and those that died of sepsis, with only slight or no obstruction in the larynx, we have left 733 cases of laryngeal diphtheria with 290, or 39.5 per cent., recoveries; of which 483 were treated without calomel-fumigations, with 171, or 35.4 per cent., recoveries; and 250 were treated with fumigations, and 119, or 47.6 per cent., recovered.

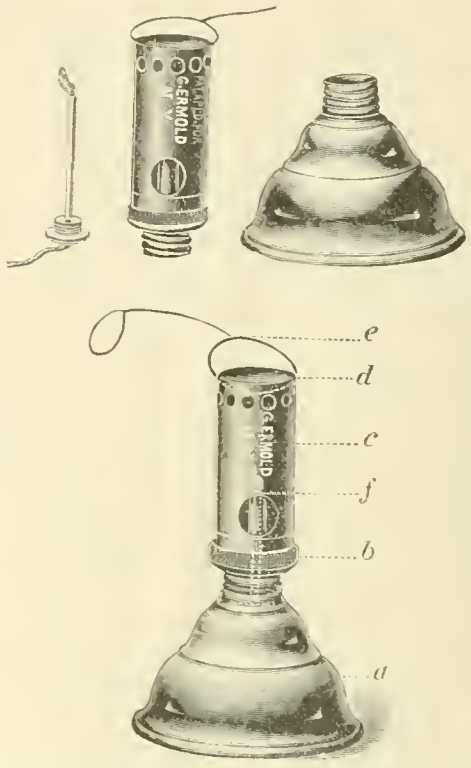
This does not by any means tell the whole story of the advantages of this mode of treatment. Under ordinary circumstances about from 8 to 10 per cent. of the cases of laryngeal diphtheria which are seen by the general practitioner make a good recovery

[1] Read before the Metropolitan Medical Society, April 25, 1894.

without operative interference, and this is such a small proportion, and after the case has developed any marked obstruction, the result is so uniformly bad, that nearly every case is seen by the consultant, if it is the custom of the attending physician to call in aid for his intubation or tracheotomy. However, since the introduction of the Corbin method the results without operative interference have improved so greatly, and the family doctor sees so many cases make a good recovery (in my own experience nearly 50 per cent.), that he is not so anxious as formerly, and besides needing aid in only half the cases, he does not send for it so early. The consultant is liable to see a larger proportion of those cases which do not yield readily to the fumigations, and a larger proportion of such cases in which the treatment is not carried out thoroughly and intelligently owing to their surroundings, or to the ignorance and carelessness of the attendants.

In this connection the statistics of McNaughton and Maddren are interesting. Reports were received from 242 physicians in different parts of the country. There were 2417 tracheotomies, showing 586 recoveries, or 24.2 per cent., and 5546 intubations, showing 1691 recoveries, or 30.5 per cent.; 505 cases of true croup were treated with the mercurial fumigations, and 275 recovered, or 54.5 per cent. Eighty-five of the 505 were operated upon after having been unsuccessfully treated by the sublimation-method. Of these, 29 recovered, thus leaving 48.7 per cent. of recoveries from the sublimation-method alone. It is worthy of note that in these statistics the percentage of recoveries in those cases first treated by the sublimation-method, and then either intubated or tracheotomized, is greater (34 1 per cent.) than that among those treated either by tracheotomy (24.2 per cent.) or by intubation (30.5 per cent.) without the sublimation-treatment. The best way to sublime the calomel is by means of the Ermold calomel-sublimer, made by George Ermold, 312 East Twenty-second street, New York. Its construction is very clearly shown by the accompanying sketches. It is very simple; it is economical, using one-third as much alcohol as an ordinary lamp, and each outfit contains three dozen ten-grain calomel tablets, which at the ordinary prescription prices would cost almost as much as the complete outfit; and it is absolutely safe, for the wick stands high above the air-holes, the heat from the chimney is cut off from the cup by a double asbestos washer, and the cup is filled with asbestos, which prevents the alcohol from escaping if the lamp is upset. The alcohol, which is vaporized, escapes along a double tube to the flame, where it is consumed.

Of course many other ways to sublime the calomel can be suggested, as putting it on a hot stove-lid or on some burning coals held on a shovel; but probably the most practical is to put the alcohol lamp in an ordinary *pot de chambre*, and over that a strip of tin or iron, on which the calomel is placed, so that the flame of the lamp comes directly below it.



The patient is put under a tent made of sheets, and the fumes of the subliming calomel are directed so as to fill the tent with a rather dense white smoke, which the child freely inhales. Ordinarily, these fumes do not cause any irritation; but if the child coughs and struggles much, the wick of the lamp may be turned down, so that the calomel will not be sublimed so rapidly. When there is much coughing and struggling, these are due either to the use of impure calomel or, more often, to fear, from lack of tact and judgment in handling the child. Most children, especially when very sick, will object to being enclosed in a tent, and they will object even more vigorously if to this is added the sight of a lot of smoke filling it, interfering with vision and causing some slight irritation when inhaled. It is often, therefore, wise to put up the tent gradually, letting first one side of the sheet down, until he gets accustomed to it, and gradually letting down the others until he is completely enclosed. Do not begin the fumigation until he is thoroughly accustomed to the presence of the tent, and often an hour wasted in the beginning of the treatment may save much trouble and inconvenience.

Be sure that the calomel is *pure* by having it freshly sublimated and washed free of the irritating impurities which are often present.

One of the best and most satisfactory tents is made by fastening to one corner of the crib or bed, or back of a chair, an open umbrella, and throwing the sheet over this; another is made by throwing the sheet over a framework made by fastening to each corner of the crib a cane or bed-slat; and still another by tacking one end of the sheet to the head of the bed and throwing the other end over a chair which is put at the foot. Many other ways readily suggest themselves, as throwing the sheet over a strong piece of string stretched across the room directly over the crib, or putting a sheet over the framework of an ordinary mosquito-bar.

In all cases of diphtheria it is well to sublime 20 grains of calomel three times daily as a prophylactic against laryngeal invasion. As soon as laryngeal symptoms present themselves 15 grains should be sublimed every one, two, or three hours, according to the progress of the disease. It ought to take from eight to ten minutes to sublime 15 grains. If the symptoms grow worse rapidly the frequency and size of the dose should be increased until at least 60 grains are used every hour. In spite of this a certain number of cases will require operative interference; but after the intubation or tracheotomy the fumigation should be continued, using for the first three days from 15 to 40 grains every hour and gradually decreasing the size and frequency of the dose, according to the indications. This must necessarily be, to a great extent, a matter of judgment and experience; but the average case that recovers will receive 20 grains by fumigation every hour for three days, and the interval will be increased one hour every day for the next three days, when it is stopped or used once or twice daily as a prophylactic, if membrane persists in the nose or pharynx. If in doubt as to what amount to use, the larger dose should always be used. I have seen many cases in which over 2000 grains have been used during the course of the disease, and the patient has recovered with few or no bad symptoms. The only cases of unmistakable bronchial diphtheria which have gotten well, in my experience, were three in which this treatment was used; in one case from 30 to 40 grains were used every hour for six days (making a total of nearly 5000 grains). The child was not affected, except by a very slight stomatitis and some weakness and anemia.

It is to be remembered that the dose is determined, not by the amount of calomel which is sublimed, but by the amount which is inhaled; therefore, even more important than the number of grains of calomel used and the rapidity of the sublimation is the size of the tent and the density of the fumes which fill the tent.

The effect on the children of such large amounts of calomel is to cause more or less prostration and anemia, occasionally a diarrhea with some abdominal pain, very rarely a stomatitis, almost never salivation, and in only one case have I seen a conjunctivitis. It is remarkable how well these children stand the fumes, while the attendants must take the greatest precautions to avoid them, or they will be quickly salivated, and they may suffer from pain and a constricted feeling in the chest.

Practically, as far as the patient is concerned, the only objection to this treatment resides in the prostration and anemia which it causes, and the occasional salivation. However, the percentage of deaths from exhaustion has not increased in my practice since its use was begun, and the percentage of recoveries has greatly increased. I believe that in a certain proportion of cases convalescence has been more or less protracted by the effects of this treatment, and I always try to counteract this as much as possible by giving a mixture containing iron, and before or after each sublimation a small dose of whiskey, brandy, or other stimulant.

The following precautions should be observed:

1. The nurses and attendants should be warned against inhaling the fumes.

2. The child's skin should be covered, so that the full effect of the fumes may be confined as much as possible to the local deposit on the mucous membrane.

3. Before each sublimation the child should be given a small dose of whiskey.

4. After each sublimation the mouth, gums, and teeth should be cleaned with a weak solution of potassium chlorate, and if the gums become sensitive they should be sponged three times a day with a mixture of equal parts of tinct. myrrh., tinct. nuc. gall., and tinct. ratanhiæ. All the re-deposited calomel should be wiped up from the furniture, etc., and the room well ventilated.

5. If the prostration and anemia seem to be greater than the local manifestations would account for, the amount and frequency of the calomel should be diminished and the stimulants increased.

6. If the nasal passages are not infected, it may be wise, especially in older children who are taking very large doses, to cut off the fumes from the nose with a loose plug of cotton or ramie in each nostril.

7. It is very important to use pure calomel that has been washed free from all irritating impurities.

For Laryngismus Stridulus.—

R.—Chloral. hydratis . . . . ℥ss.
Potassii bromidi . . . . ℥ij.
Syr. tolutan. . . . . f℥iv.
Aquæ menthæ piper. . . . f℥ss.—M.
S.—℥j every hour.

Med. Press and Circular.

SIX CASES OF APPENDICITIS.[1]

BY W. T. DODGE, M.D.,
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PHYSICIAN AND SURGEON TO MERCY HOSPITAL.

THE cases reported in this paper that were treated in Mercy Hospital were under the joint care of Dr. J. L. Burkart and myself, and we are equally entitled to credit or discredit for the results obtained.

In THE MEDICAL NEWS of January, 1891, I published a report of the cases of appendicitis that had been under my care up to that time. Since then I have seen six cases either as attendant or consultant, five of whom submitted to operation and recovered, while one died without operation:

CASE I. *Appendicitis; ulceration; abscess of three months' duration; rupture; general peritonitis; death.*—This case is interesting as illustrating the wonderful endurance of some men and the comparatively mild symptoms sometimes produced by a collection of pus in the abdomen.

T. McK. was admitted to the Mercy Hospital, March 29, 1892. He had travelled forty miles on the cars, and rode from the depot to the hospital in a hack. He complained of some abdominal pain, more particularly in the right side. There was much localized iliac tenderness and a general rigidity of the abdominal muscles. He said he had suffered from rheumatism in the right hip and leg all winter, but had been working in the woods right along until three days before, when he had a sudden, severe attack of pain in the right side, and not feeling better after two days' rest he had come to the hospital. His pulse was 76, full and strong, and his temperature was 100°. We made a probable diagnosis of appendicitis, and appointed an operation for the following day. The next morning, upon arriving at the hospital, we found the patient dead. He had not attracted particular attention until some time during the night, when he was found to be failing, and in spite of the free administration of stimulants he died at about 6 o'clock. An immediate autopsy was held, and the peritoneal cavity was discovered to be full of foul-smelling pus. Much lymph covered the intestines, showing that general peritonitis had been going on for several days at least. On the right side, behind the cecum and ascending colon, was a large abscess-cavity, extending from the cecum to the liver. The walls of this cavity were half an inch thick, and near the upper border, below the liver, a small opening connected with the general peritoneum. The sloughing remnant of the appendix, after considerable search, was found hanging from the cecum, thus indicating the origin of the trouble. The remarkable fact was thus demonstrated that this man had actually for months worked in the lumber woods with a large collection of pus in his abdomen, and had attributed the pain it produced to rheumatism. He had finally given up work, and come for treatment, when the rupture took place into the peritoneum, and even then, after a long journey, not presenting critical symptoms.

This case corroborates the contention of Dr. J. B. Murphy* (*Journal of the American Medical Association*, March 3, 10, 17, 24, 1894), that shock does not follow immediately upon the rupture of an abscess into the peritoneum, but that septic peritonitis is first developed without the occurrence of the so-called classic symptoms, and that finally, perhaps several days after the rupture, the system is overwhelmed by absorption of the products of inflammation, collapse supervenes, and death soon follows.

CASE II. *Appendicitis; ulceration of the tip; amputation of appendix; recovery.*—C. L., thirteen years of age, was a patient of Dr. Burkart, and was attended by him for several weeks before admission to the hospital. He had the usual history of pain in the right iliac region, constipation, and fever. A well-defined swelling made its appearance early, and when I first saw him, two weeks before the operation, it was about the size of a hen's egg. This proved to be a slow case in its development, the swelling at times subsiding temporarily, and the parents would not consent to an operation for several weeks. Their consent being finally obtained, the boy was removed to the hospital, and an operation performed on October 19, 1892. The appendix was easily discovered. It was much thickened and inflamed; its tip was ulcerated and firmly adherent to the adjacent intestine. There was no pus, but the tissues appeared decidedly necrotic. The appendix was ligated and removed, the parts irrigated, and a packing of iodoform-gauze introduced. Considerable suppuration followed, and the wound did not become firmly closed for several weeks. The boy has since remained well.

CASE III. *Recurrent appendicitis; numerous attacks during a period of four years; operation; separation of adhesions; appendix not removed; recovery, with no return of symptoms up to the present time.*—A. C. was admitted to the hospital November 28, 1892. He had a swelling in the right inguinal region, somewhat tender on manipulation, which he said had appeared at intervals of a few weeks for four years. Some of the attacks had been very severe, confining him to the house several weeks at a time. His bowels generally moved every day, and on admission he had no elevation of temperature, the present attack having been a mild one. Operation was advised, and consent being given it was immediately performed. The cecum and loops of the small intestine were found to be firmly bound together by adhesions. These were separated as much as possible, and some hard fecal masses in the cecum were broken up. It was impossible to separate all of the adhesions or to find the appendix, although nearly three hours was devoted to the task. At one point the cecum was very firmly adherent, the peritoneal coat giving way before we abandoned our attempt to liberate the intestine, and it is probable that the appendix was there involved. We introduced a gauze drain, and closed the abdomen, not

[1] Read before the Michigan State Medical Society, May 3, 1894.

expecting that our patient would be much benefited by our manipulations. A considerable discharge of pus occurred when the gauze was removed a few days later, and the suppuration continued several weeks, when the abdominal wound was firmly united. The lad called upon me in March, 1894, when a careful examination failed to discover the presence of any thickening in the right side, and he stated that he had no symptom of his former trouble since leaving the hospital.

Case IV. *Ulcerative appendicitis; removal of appendix; suppuration; fecal fistula; recovery.*—In August, 1892, a young man entered my office, walking with much difficulty, his body being strongly inclined to the right. He said that he had been taken sick about a week previously in Wisconsin, with intense pain in the right inguinal region; that he had been confined to his bed a few days, had then come to Big Rapids by boat and railroad, and then walked a distance of three miles to his home. There he had remained two days without treatment, and then rode to town and climbed the stairs to my office. I found a well-defined, ovoid swelling in the right inguinal region, not very sensitive to manipulation, but the seat of constant dull pain. I diagnosticated appendicitis, and recommended an operation. He was not disposed to consent to that, and I sent him home and ordered him to remain in bed, where I saw him a few times, renewing the advice for operative interference. After the third visit I received word not to come again, and a few days subsequently was invited by Dr. L. S. Griswold to see the case with him. The doctor had been called, and his advice being also for operation, the patient gave his consent, and on August 30, 1892, Dr. Griswold performed the operation, assisted by Dr. Burkart and myself. The appendix was found to be firmly adherent to the bowel, and when separated disclosed a large hole, from which an ordinary white bean protruded. Suppuration had not occurred, but would certainly have done so soon, as the tissues were in a necrotic condition. The appendix was ligated and removed, gauze drainage introduced, and the abdominal wound closed. Suppuration followed, and a few days later a large discharge of feces occurred from the wound. The fecal fistula closed spontaneously in a short time, and the patient made a good recovery.

Case V. *Suppurative appendicitis; operation; recovery.*—In January, 1893, I was called in consultation with Dr. J. T. Clark, of Stanwood, to see a young lady who had been sick for four weeks. She had at first been under the care of Dr. Brown, of Morley, and early in her sickness had been seen by Dr. Griswold. Appendicitis had been diagnosticated at that time, and operation recommended, but refused. She had been very sick, with high temperature, much pain, and obstinate constipation. Dr. Clark had given several large enemata a week before I saw the patient, with the result of removing large quantities of fecal matter and allaying many of the acute symptoms. At the date of my visit the patient was cheerful, free from pain, and believed that she was recovering rapidly. There was a large ovoid-shaped tumor in the right inguinal region, slightly sensitive to touch. I did not suspect the presence of pus, but recommended removal of the appendix. Consent was readily granted, and I performed the operation on the following day—January 11th—with the assistance of Drs. Clark, Burkart, and Bradley. On opening the peritoneum a quantity of pus immediately appeared. The cavity was washed out thoroughly, and adhesions carefully separated, and two other and larger pus-cavities were discovered. The sloughing appendix was found in one of the pus-cavities, and was ligated and removed. It contained a small, hard, fecal concretion. Thorough irrigation of the abdomen was practised, a drainage-tube introduced, and the wound closed. The patient made a rapid recovery, the after-treatment being under the care of Dr. Clark. On the seventh day the ligature that had been applied to the appendix came away, and with it a small quantity of feces. No further fecal discharges occurred, and the abdominal wound rapidly closed.

Case VI. *Suppurative appendicitis; operation; recovery.*—I saw Mrs. B., a widow, on September 21, 1893, in consultation with Dr. Darr, of Morley. She had for two or three weeks experienced uneasy sensations in her right side, had been constipated, and had noticed a swelling in the right inguinal region, but these symptoms had not been severe enough to prevent her from following her vocation or to induce her to consult a physician until the evening of September 15th, when she was in Grand Rapids, in attendance upon the Maccabee meeting in that city. She had been on her feet a good deal for several days, and on that evening had a sudden, severe attack of pain in the swelling she had previously discovered in the right side. A physician was called, who pronounced the trouble "falling of the womb," gave her an opiate, and endeavored to persuade her to remain in the city and allow him to treat the so-called womb-displacement. This she refused to do, and went to her home in Morley on Saturday morning. Almost immediately upon her arrival home the pain returned, and Dr. Darr was consulted. Symptoms of peritonitis rapidly developed; she had severe abdominal pain, tympanites, and vomiting, with high temperature. When I saw her on the following Thursday evening she had a temperature of 104°, a rapid pulse, tympanites, a highly sensitive abdomen, drawn up limbs, and an anxious expression of countenance. She was profoundly under the influence of morphin, and was said to be in great agony when not controlled by that drug. There was dulness in the right inguinal region, but no well-defined tumor could be made out on account of the general abdominal distention. Through the vagina a well-defined thickening could be distinguished on the right side. I recommended immediate celiotomy, and consent being readily granted, I performed the operation the following morning, with the assistance of Drs. Darr and Brown. A lateral incision was made, and when the peritoneum was opened we were greeted with a gush of pus, quickly followed by a loop of inflamed intestine. My finger passed at once into the peritoneal cavity. The pus was not large in amount, and was only found around the cecum, which was not walled in by

adhesions, and the general peritoneum throughout the abdomen was red and inflamed. The appendix was easily recognized and removed. It was enormously enlarged, thickened, and perforated. It will be seen by an examination of the specimen that it is as large as and much resembles in appearance a typical pus-tube. Between the mucous and peritoneal coats was found a fragment of beef-bone, which was undoubtedly the cause of the trouble. It had ulcerated through the mucous coat, and was traveling back under the peritoneum toward the bowel. It was apparent that there should have been no time spared in operating on this patient. A few more days delay and she would have been in her grave. The entire abdomen was repeatedly flushed with hot water, iodoform-gauze drainage was established, and the abdomen was closed. Convalescence was somewhat protracted, and the woman was annoyed for some time with tympanites and constipation, but recovery was ultimately complete. The after-treatment was in charge of Dr. Darr.

My experience has made me a firm advocate of early operation in all cases of appendicitis. Undoubtedly some cases recover without operation, and by operating early an occasional abdomen may be opened in which the appendix is unaffected. But this will not often occur, and need not be a serious matter when it does. It is better occasionally to open an abdomen unnecessarily than to permit a case to run the great dangers of suppuration and peritonitis. If the operation is done early, before much necrosis of tissue or suppuration has occurred, it is a comparatively harmless procedure, and the victim will be spared many long hours of suffering that the expectant plan of treatment will subject him to. I think the majority of surgeons advocate the plan of leaving the appendix *in situ* when pus is discovered, satisfying themselves with washing out the pus-cavity and packing with gauze, or introducing a tubular drain. Doubtless this procedure is sufficient in many cases, but it is not so in all. The first case I operated on—in 1882—terminated fatally, because there was more than one pus-cavity, and I did not break up the adhesions and liberate all of the pus. I cannot see how any operator can be sure that he has only one circumscribed pus-cavity to deal with, or that the appendix may not be in the condition of the specimen exhibited, unless he separates all of the adhesions and removes the offending organ. If the procedure is done with care, irrigation practised freely, and subsequent drainage established, I do not think there is great danger of general peritonitis developing. Certainly the danger is not so great if all adhesions are broken up and all pus removed, as it is if a large pus-cavity is left behind or a large suppurating appendix like this specimen is left undisturbed. To sum up, then, I am in favor of operating early in all cases of appendicitis, or suspected appendicitis, before pus forms, if possible. If, however, pus has formed, I favor careful separation of adhesions, thorough irrigation, and removal of the appendix.

CLINICAL MEMORANDA.

FRACTURE OF THE SKULL; TREPHINING; RETRO-ANTEROGRADE AMNESIA; RECOVERY; DEATH ONE MONTH SUBSEQUENTLY FROM OTHER CAUSES; AUTOPSY.

BY EDMUND J. A. ROGERS, M.D.,
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AND

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SURGICAL REPORT, BY DR. ROGERS.

WILLIAM D., a passenger on a Rio Grande train coming into Denver on the night of June 7, 1893, while intoxicated, walked off the train, which was running at full speed, and was soon after missed. Upon search being made, he was found lying beside the track unconscious, with a very severe wound in the head. He was picked up and placed in the bunk of a freight caboose, where the torn scalp and exposed skull were in contact with the fittings, brought seventy-five miles into Denver, and, after he had examined the wound on the head, transferred by the police surgeon to St. Luke's Hospital. I saw him there immediately. He appeared to be perfectly conscious and stated that he had been hurt in a coal mine by an accident which had happened the day before; that his head had been slightly injured, but that he knew the injury was not severe. On being questioned more closely he stated that he had come to Denver for treatment of his own free will; that he had knowingly passed Pueblo, where the company's hospital is situated, because he did not care to be treated there. He answered every question about the journey and about the accident rationally and was quite positive that the statements he made were correct; still he was not dogmatic. His story seemed so rational and so well connected that I telephoned again to the railroad company for assurances as to how the accident had happened.

On examining the head I found that the scalp on the left side had been caught toward the front side by a backward blow, and an extended flap, triangular in shape, had torn backward. Just inside the apex of the flap was a very extensive compound fracture, also angular in shape, corresponding to the line of tear of the scalp. The depression was quite marked at the apex of this triangle, which was situated one inch in front of the sagittal suture and about three inches below the median line. Externally the two sides of the fracture diverged at an angle of about thirty-five degrees backward, and were each about two inches long. As there were no urgent symptoms I cleansed the wound

thoroughly, put on a temporary dressing, and left the patient till the following afternoon. I then trephined just beyond the apex of the fracture, so as to reach the point of greatest depression. I first removed a three-fourths inch button and then enlarged the opening so as to easily get under the inner plate, which we found depressed over a much larger area than was the external plate, the lines of fracture not corresponding in the two plates. The dura was found extensively torn, and on raising the depressed area, which was easily done, the blood flowed very freely from under the membranes through this wound. Bleeding was so free that it was not deemed wise to close the wound entirely. The scalp was replaced and closed everywhere, except immediately over the opening into the skull.

The patient's general condition was excellent. He was examined carefully before and after the operation by Dr. Eskridge, who from this time on saw him frequently with me. Dr. Eskridge's notes, given herewith, fully describe the mental phenomena which were now one of the marked features of the case.

The wound was dressed on the third day and was found doing well. On that day his temperature fell to normal and never rose above it again. The wound, which had been left open, began to close quite rapidly, but the pulsating brain could be seen at the bottom of it at all times. The patient went on without a bad symptom of any kind, and at the meeting of the State Medical Society, on June 20th, he was taken before the members and the wound exhibited. The brain could be seen pulsating over a very small area.

The patient continued to improve and apparently felt quite well in every particular until the morning of July 4th, when he was taken suddenly with a severe choleraic diarrhea. This, after a few hours, completely prostrated him. It was a form of diarrhea of which there were then many cases about the city. The patient never rallied from this prostration, but died on the 8th of July, seemingly from an entire loss of recuperative force.

On the following day a post-mortem examination was made and the conditions thoroughly examined. The wound in the skull was found completely closed, except a small orifice about a sixteenth of an inch in diameter. New bone seemed completely formed, making a translucent diaphragm across the opening. The line of fracture, both in the internal plate and in the external plate, was distinctly visible, the area of fracture in the internal plate being very much larger than that in the external. The membranes were found completely healed and showed no signs of ever having been injured, and the brain beneath was perfectly normal and healthy. The entire brain was very anemic, but no gross lesion was found.

MENTAL PHENOMENA, BY DR. ESKRIDGE.

I am indebted to the courtesy of Dr. Rogers for the privilege of studying the interesting mental phenomena of the case he has reported in this paper.

That the patient's confused mental state may be the better understood, I will first state facts in the history of the patient, especially those surrounding the accident and extending over his amnesic period, as they really occurred, and refer to his story as he gave it to Dr. Rogers on his admission into the hospital, reporting circumstances as they seemed to occur to him in his blurred conscious state; and finally, I shall try to show the relation between the real and the supposed occurrences, or the structure on which his delusions were founded.

William D., forty-six years of age, of England, single, a miner, came to Colorado fifteen years ago. His family history, so far as I was able to learn, is negative. His health during childhood was excellent, and he denied any venereal disease. He was not a "steady drinker," but indulged in alcohol to great excess periodically for a number of years. He stated that when he indulged in alcoholic liquors he did so on account of an overpowering desire for alcohol.

About June 4th or 5th an explosion occurred in the mine in which he had been accustomed to work, and several men were injured, but D. was not in the mine on the day of the explosion. On June 6, 1893, he fell in the mine and slightly injured his nose, but the next day he felt but little inconvenience from the fall. On June 7, 1893, at 10 A.M., he left Calumet, Col., on a freight train and reached Salida at 11 A.M. Between this hour and 2.45 P.M. he drank six glasses of beer. Before leaving Salida at 2.45 P.M., with two or three companions, he purchased a bottle of whiskey, and from this bottle he took three drinks before reaching Pueblo, during two or three hours' ride. After leaving Pueblo he felt a desire to urinate and went to the water-closet; but finding it closed, he went out upon the rear platform, from which he fell.

The remainder of the patient's experience on the nights of June 7th and 8th; his story, as told by himself on reaching the hospital, together with the treatment and subsequent surgical progress of the case, are related by Dr. Rogers, under whose care he remained until he died, nearly a month after his admission into the hospital.

He rode on a passenger train from Salida to Denver.

To prevent a break in the history of the case, and to save the reader the trouble of referring to the first part of this report, I shall have to repeat some things already given by Dr. Rogers.

D.'s Account of Himself a few hours after the Injury to his Head.

(For this I am entirely indebted to Dr. Rogers, who has kindly allowed me to use his notes.)

On reaching the hospital the man seemed to be perfectly conscious, and stated that there had been an accident the day before in the Calumet coal-mine, and his head had been slightly injured by a fall, but that he knew the injury was not severe and he would be all right in a few days. When asked by Dr. Rogers why he had not left the train at Pueblo and gone into the company's hospital there, he replied that "The men wanted me to do this, but I would not do it, as I preferred coming to Denver." In Dr. Rogers's own words: "He answered every question about the journey and about the accident rationally, and was quite positive that the statements he made were correct; still he was not dogmatic. His story seemed so rational and so well connected that I telephoned again to the railroad company for assurances as to how the accident had happened." He said that his head had been examined.

(It is probable that the examination here referred to was that made by the police-surgeon on his reaching Denver.) He was quite positive that he had not been on a passenger train, but had ridden all the way from Salida on a freight train. He seemed conscious of the day and the month. He stated that he had no friends in Denver, and nothing more than acquaintances in Colorado, miners with whom he had been working, and that most of his near relatives in England were dead. He appeared rational all the next day.

I saw him for the first time on June the 8th, a few minutes before the operation at 5 P.M., but I had no opportunity to inquire into his mental condition. The physical condition was as given by Dr. Rogers. Some time during the day subsequent to the operation, June 9th, he awoke, seemed confused, looked around the ward, and said, "Where am I?" On inquiry, I found that his mind was almost a complete blank. He could give no account of himself, seemed utterly bewildered, and would relapse into a semi-stupor immediately on being left alone. On June 10th, 11th and 12th, his mental condition seemed to be improving, but his answers to questions were so contradictory as to be wholly unreliable. On June 13th and 14th he was much brighter and gave a consecutive account of his early history, his occupation, and his habits; but while he appeared to respond to impressions made upon him at the time, he retained no memory of them a few minutes afterward. He was not aware that he had been injured on a train, that he had been operated upon, or that he had been in the operating-room at all, although he had been taken into the operating-room several times since his entrance into the hospital.

On June 15th he was quite bright and answered questions coherently, but he remembered absolutely nothing from the time he reached Salida until he found himself in the hospital yesterday. He did not remember yesterday afternoon that he had been in the hospital all day, but on the 15th he was conscious of having been in the hospital one entire day before the 15th. He thought he had been in the hospital longer than this, but he said he only inferred this, as he remembered absolutely nothing that occurred two days before. When he was taken to the operating-room on the 15th, he remembered that he had been in that room once before, but he could not tell when he had been there. I was informed that he had been in the operating-room on the 14th.

He gave an account of his journey in a freight car from Calumet to Salida; thought he drank something while in Salida, but of this he was not sure. He spoke of his fall in the Calmumet mine, and of the accident to his nose, of the explosion that had occurred in the mine a few days before his fall, and of the injury of several of the miners; but of his boarding a passenger train at Salida for Denver he had no remembrance.

On June 16th he was still improving, and remembered quite distinctly of drinking in Salida, but was still under the impression that he came all the way to Denver in a freight car.

On June 18th, at 8 A.M., he remembered that he had talked with a large man in the ward about mining several days ago. On inquiry of Mr. Le Strange, the man with whom he had talked, this was found to be on Tuesday, June 13th. A few hours later he remembered having had his head dressed in the operating-room the day before he had the conversation with Le Strange. At 7 P.M. of the same day (June 18th), he remembered having been in the hospital one week ago, June 11th. This fact he recollected during the afternoon, and at my evening visit he stated that he was in a certain bed on that day on the opposite side of the ward. This, on inquiry, I found to be true.

On June 20th he could give the number of drinks of beer that he drank while in Salida, and tell what he and his companions did while there from 11 A.M. till 2.45 P.M.; he mentioned purchasing a bottle of whiskey in Salida, and taking three drinks out of it before reaching Pueblo, and said the last thing which he remembered on that day, June 7th, was going to the water-closet at the rear end of the car to empty his bladder, and finding the closet occupied he went out upon the rear platform of the car. After this all was a blank. He was not positive whether he rode on a passenger or freight car from Salida to Denver, but supposed it must have been a passenger car.

His memory was carefully inquired into daily, and sometimes several times daily, from June 20th till the beginning of his fatal illness, July 4th, but nothing further was remembered by him.

Occurrences on which D.'s delusions were founded.	*D.'s delusions.*
1. An explosion in the Calumet mine in which several miners were injured on June the 4th or 5th.	1, 2 Believed that his head had been slightly injured in a mine explosion, and that he had not been severely injured by a fall from a train.
2. D.'s falling in the same mine on June 6th, and injuring his nose.	
3. Travelled from Calumet to Salida on a freight train, and drank heavily at Salida.	3. Believed he had ridden all the way from Calumet to Denver on a freight train, and that he had not been on a passenger train at all; and all his answers to questions in relation to the journey based on the belief of his having come all the way in a freight train.
4. Prejudice of the miners against the company's hospital in Pueblo.	4. He said the men wanted him to get off at Pueblo and go to the company's hospital there, but he refused, as he preferred coming to Denver to be treated.

The separate and distinct accidents—the one, the explosion in the mine in which several miners had been injured, although D. was not in the mine at the time; and the other, D.'s falling in the same mine a day or two subsequently to the explosion, by which he had injured his nose—in his confused mental condition were not separate in his own mind, and as the explosion had probably made a greater impression upon his mind in its normal condition than the trivial accident by which he had been slightly injured, he attributed his head-injury to that accident which had made the greater impression upon him at the time of its occurrence. He did not realize that he was severely injured, although the wound was in a different portion of his person than the one really received at the time of his fall, but contended that he was only slightly disabled and would be all right in a few days.

His firm belief that he had ridden all the way from the Calumet mine to Denver on a freight train, and had not travelled the greater portion of the distance, from Salida to Denver, in a passenger coach, can be accounted for either on the theory of temporary retrograde amnesia, extending back from the time of the injury to the time of his arrival in Salida on a freight train from Calumet, or from the effect of his free indulgence in beer soon after he reached Salida, thus clogging his mental powers so that he was scarcely able to distinguish the difference between a coach and a box car. That alcohol played some part in his temporary retrograde amnesia becomes the more probable when we recall to mind the fact that his actions during this period of his temporary amnesic state were the last to be recollected.

Things that were correctly remembered during his most profoundly amnesic state were events long past, as, for example, that he was born in England and that most of his near relatives were dead.

As to certain circumstances relating to his own personal condition and environments, he realized that he was a miner and that he had no intimate friends in Colorado, his only aquaintances being miners with whom he had been accustomed to labor.

The total amnesic period extended from June 7th, at 11 A.M., until June 14th, at 5 P.M. Of this period, eleven hours, from 11 A.M. until 10 P.M., are of the retrograde type, and six days and nineteen hours are of the anterograde. It is possible, and even probable, that he might have remembered something on June 14th, before 5 P.M., but at my morning visit, at 8 o'clock, he did not, and Dr. Fish, one of the hospital residents, had been unable, between my visits, to find out that he remembered anything of the occurrences of the day before. Besides this complete amnesic period shading off, both before and after the accident, there was at first a greater or less length of time during which he only remembered imperfectly. During these incomplete ante-amnesic and post-amnesic periods memory was the worse the nearer the complete amnesic state was approached in point of time, and best the longer the interval of time that had intervened between the state of complete amnesia and the time at which his memory was investigated; so that soon after the amnesia ceased to be complete, memory was only reliable for things relating to himself, such as being in the operating-room and having his head dressed, his conversation about mining, his being in the hospital ward, etc.

The permanent amnesic period began just immediately preceding his fall from the train, when he went upon the rear platform of the passenger coach, and continued until June 11th, a period of four days, all of which was of the anterograde type. During the twenty-three days that intervened between the 11th of June and the beginning of his fatal illness, July 4th, this period of complete amnesia was not encroached upon by his being able to recall a single incident that had occurred at any time of this period.

As to the manner in which D.'s memory returned for events occurring during his temporary amnesic state, it may be noted that at 8 A.M. of June 18th he remembered that some days before he had talked with a man in the ward about the Calumet mine. On inquiry of the patients in the ward I found that the conversation was held with a miner by the name of Le Strange, on June 13th, just five days before. About 12 M. of June 18th he remembered that he had been dressed in the operating-room. On looking up the records of his case I found that this occurred on Monday, June 12th, six days before. At 7 P.M. of the same day he remembered that he was in bed on the other side of the ward several days ago, and this fact came to his consciousness sometime during the afternoon. I ascertained that he had occupied a bed on the other side of the ward on June 11th.

It will be seen that for events occurring after the accident memory manifested itself first for periods furthest from the time of the occurrence of the injury to his head, and that each registration of memory was for events that had taken place, in point of time, at periods nearer and nearer the time at which he had sustained the injury. Further, the things that his memory was first able to recollect were those relating to himself, either directly or indirectly.

On examining into the manner in which the retrograde period of amnesia was obliterated it was found that he was first able to give the number of drinks of beer that he had taken in Salida, what he and his companions did while there, from 11 A.M. until 2.45 P.M., including the purchasing of a bottle of whiskey to take on the train with them. He next remembered getting into a car for Denver, but never had any distinct idea whether it was a coach or a freight car. The next day he remembered taking three drinks on his way from Salida to Pueblo. The last thing that he was able to remember occurred just a few minutes before the accident. He said that he remembered feeling a desire to urinate, going to the water-closet, finding it occupied, and then going to the rear platform.

Here again the things first remembered were most remote from the accident and those last recalled to his mind occurred just prior to it. Everything that he remembered during this period was something relating to himself. It is important to bear in mind that the thing remembered as occurring nearest to the time of the accident was something relating to his personal discomfort and means taken to relieve this.

As to the diagnosis of amnesia. If a person after coming out of an amnesic condition should be able to recall anything that took place during the time of the existence of the amnesia the memory for such occurrences seems to be, in the majority of instances, accurate and reliable; but if any portion of the events thus recollected should prove to be false, the cause for the inaccuracy, if thorough investigation is made, will be found in the environments of the subject or in the history of his acts previous to the occurrence of the accident, or other causes which produced the amnesia.

In the case just given, D. was never able to remember clearly that he came to Denver in a passenger coach and not in a freight car. The explanation of this discrepancy is found in the fact that he rode from Calumet to Salida in a freight car, and then became partially intoxicated before leaving Salida in a passenger coach for Denver.

Other things being equal, the history of this case shows that events occurring furthest from the time when the amnesia begins are remembered before things occurring in point of time more nearly related to the beginning of the amnesia. This rule seems to hold good in

all forms of amnesia, and when it is modified the cause may be found in the difference in intensity and duration of the impressions upon the individual made by the different events at the time of their occurrence.

Another point in the diagnosis of amnesia is that personal feelings, such as hunger, pain, uncomfortable sensations, and means resorted to relieve them, will be recalled more readily than mental impressions, especially those of an intellectual character. The fifth conclusion in my paper entitled "Retro-anterograde Amnesia" (*The Alienist and Neurologist*, July, 1892) is "Personal feelings and emotional states are more stable in memory than the results of the intellectual faculties."

Ribot tersely states that "feelings form the self; amnesia of the feelings is the destruction of the self."

The diagnosis of periods of complete amnesia, which remain complete and are unassociated with periods of partial amnesia, is most difficult. As a rule, such a condition is suggestive of feigning. Most persons who feign amnesia pretend to remember nothing. That states of complete amnesia, unassociated with partial amnesia, do occur I have verified in certain cases of epilepsy. Each of such cases requires a careful study.

Dr. W. P. Munn, in an editorial article entitled "Unreliability of Ante-mortem Statements," in the *Denver Medical Times*, on learning the facts in the case reported in this paper, took issue with the rule of the courts in allowing the admission of ante-mortem declarations as evidence in homicidal or murder cases.

An imaginary case might be instanced. Suppose that D. had had an altercation with someone and had in consequence received a slight wound about the face or head, and he should shortly afterward accidentally have seriously injured himself by a fall, striking his head against some unyielding substance, which produced the same amnesic condition in which D. was found on entering the hospital. Under such circumstances the altercation would have been more impressed upon his mind than the fall from which death might result, and he would naturally have attributed his wound to the blow inflicted by the man with whom he had had trouble.

At first thought this supposititious case seems to militate against the value of ante-mortem declarations. But we most remember that the law provides that an ante-mortem statement, to be of any value, must be made by the person making it, when he believes himself fatally injured, without any chance (even though that should be small) of recovery, and usually while he is in imminent danger of speedy death.

So far as my experience goes with head-injuries, all persons who have been rendered amnesic by them have regarded their wounds as slight and have expressed the belief that they would soon be all right again. I have records of some eight or ten cases of amnesia produced by injuries to the head, and in all of them the firm belief of the trivial nature of their injuries has been expressed.

Dr. Cusco, the inventor of the speculum known by his name, died recently at the age of seventy-five years. He was, early in his career, a brilliant surgeon, and he contributed to the literature of ophthalmology and gynecology.

FOUR CASES OF OPIUM-POISONING IN WHICH POTASSIUM PERMANGANATE WAS ADMINISTERED.

By WALTER L. PYLE, A.M., M.D.,
RESIDENT PHYSICIAN IN THE EMERGENCY HOSPITAL, WASHINGTON, D. C.

Having had, within the last year, a number of cases of attempted suicide by morphin-poisoning, after the publication of Dr. Moor's article in the *Medical Record*, February 17th, on the antidotal action of potassium permanganate in morphin-poisoning, a natural interest was felt to try its efficiency in our cases, which as a rule have been the least amenable to treatment of any of our emergency-cases. This, however, is generally due to the length of time after the ingestion of the alkaloid that the patient is admitted. It is of course an easy matter to rid the stomach of lethal doses of morphin within a few minutes after ingestion, and combat the subsequent symptoms, but only one who has labored with a case several hours old can appreciate the difficulty and work required to combat the effects of the absorbed poison. It was in such cases that we were particularly desirous of testing the antidote, as therein its greatest value would lie, particularly in cases of attempted suicide, in which the dose is usually taken in a locked room, or in some place not readily accessible, or in which early discovery is not likely to be made. Any remedial measure within reason is worthy of trial; in fact, one so extreme as tracheotomy and artificial respiration by means of wind-bellows should be considered advisable in a case not responding to other measures.

Through the courtesy of my chief, Dr. George Byrd Harrison, I am able to present the following cases:

Case I.—James S., a white, male clerk, fifty-seven years of age, was, at 7 A.M., April 11th, heard to go into his bath-room and return to his bed-room, and lock the door. Being accustomed to sleeping late, having recently been ill, he was not disturbed until about 1.30 P.M. After getting no response to repeated knocks on the door, his room was entered by the window, and he was found unconscious in his bed, with an empty vial of morphin-sulphate pills, gr. ⅛, by his side. A physician was hastily summoned, who administered atropin, and called the hospital-ambulance. The man was brought in about 2.30 P.M. Just how long after taking the morphin he was admitted we could not say, but as he usually arose before 9.30 A.M., we have good reason to believe that it was before that time. Assuming this correct, he reached the hospital five hours after the alkaloid was taken. He was in a state of collapse, his body cold, his face almost purple, and his pulse, heart-action, and reflexes were absent. His pupils were contracted to the size of pin-points, and altogether the case looked hopeless. The stomach-pump was employed and the gastric contents removed, and replaced with a solution of potassium permanganate, 6 grs. to 6 oz. of water. This was removed, and a similar solution re-introduced. Continued hypodermatics of strychnin to a total of gr. $\frac{1}{10}$, and atropin to gr. $\frac{1}{20}$, caffein to grs. 6, were given. Artificial respiration was practised, and the man was given several hot foot-baths, and catheterized.

The permanganate was given in the arms hypodermatically, but the enfeebled circulation rendered this, as well as all other hypodermatic administration, rather

inoperative. Faradization was tried, with no avail. About 4.30 P.M., about two hours after admission, we were somewhat encouraged by the man's condition. The conjunctival reflexes returned, as well as the reflexes of the soles of the feet. The condition remained the same, although constant friction and massage rendered the circulation more appreciable. Anal dilatation was tried, but about 9.20 P.M. cyanosis returned, respirations were abolished, and a fatal issue ensued.

CASE II.—Harry M., a white male, an ex-pugilist, twenty-two years of age, in a fit of despondency after a debauch, in which he admits having taken repeated doses of morphin sulphate, at 4.15 P.M., April 16th, took three teaspoonsful with suicidal intent. The ambulance was called shortly after he fell in the street, and he arrived at the hospital at 4.45, thirty minutes after taking the drug. Artificial respiration was practised, and hypodermatic injections of atropin were administered in the ambulance. On arrival at the hospital his respirations were shallow, and not over two a minute—virtually slight gasps. His pulse was slow and full, his pupils pin-point in size, and his face and lips cyanosed. His forehead was cold, and bore a profuse perspiration.

Artificial respiration was continued by Sylvester's method. The contents of the stomach were removed by the pump, and a solution of 6 grs. of potassium permanganate to the pint of water was introduced, and it in its turn removed and replaced by 8 oz. of a half gr. to the ounce solution. Repeated hypodermatic injections of strychnin, caffein, and atropin were given, as in the previous case. The feet were placed in pails of hot water, and then douched with cold. We then gave, hypodermatically, five injections of one grain to one ounce solution of the permangate, three in the arm and two in the leg. Friction and massage were vigorously practised, and the chest and face were alternately lashed with hot and cold towels.

After twelve minutes of this treatment the man regained consciousness, and was given a pint of strong, hot coffee. He continued well for about ten minutes, and then suddenly again became asphyxiated and cyanosed. There seemed to be a spasmodic closure of the larynx. The treatment was continued, the tongue was drawn forward and the throat cleansed. Anal dilatation was also tried. Finally a hypodermatic injection of atropin, gr. $\frac{1}{60}$, was given directly over the larynx, and some signs of respiration returned. The man gradually improved, the cyanosis disappeared, and the reflexes rapidly returned.

Consciousness was regained again after twenty minutes' vigorous treatment. The man was given 4 ounces of the solution, and this was followed by copious draughts of strong, hot coffee. As he seemed to be doing well, he was dressed, walked about, and constantly awakened, as he was about to fall asleep every other minute.

Shortly after midnight he was taken to the hospital-ward and allowed to sleep for about half an hour. During this time his respirations had been strong and full, about twelve to the minute, and after being awakened easily he was allowed to sleep all night. The next morning he felt well enough to dress himself, and complained of nothing but a little soreness and weakness, naturally resultant upon such vigorous treatment, in which the energies of the whole hospital-corps were well-nigh exhausted. On the following day he was discharged perfectly well.

Another interesting feature of this case was the sensation of intense itching which developed. This, in itself, kept him from falling asleep for quite half an hour.

CASE III.—Nettie H., a white female, twenty-five years of age, a prostitute, while on a debauch took half an ounce of laudanum with suicidal intent. The dose was taken about an hour before the ambulance was called. Meanwhile an attending physician, who was immediately summoned, had induced her to drink about two grains of the permanganate in solution, and had administered atropin sulph. gr. $\frac{1}{60}$. On admission she was cyanosed, her respirations were shallow and slow, and about eight per minute. The pupils were contracted, but not to the size of a pin-point; consciousness was lost, the pulse was slow and full, and the conjunctival reflex was present.

The stomach-pump was employed, as in the previous cases, being preferable to any emetic, particularly one of central action, which very often fails to act; indeed, apomorphin I have seen act almost identically in the same manner as morphin, producing narcosis rather than emesis.

The gastric contents were removed and replaced by 8 grs. of permanganate in ℥viii of water, slightly acidulated. Five syringesful of this solution were also given hypodermatically, and stimulants, as in the foregoing cases, were administered. After fifteen minutes of treatment the woman regained consciousness, but lapsed into stupor, attributable, no doubt, to alcoholism. She was taken to the ward, showed no dangerous symptoms, in fact, none other than those generally subsequent to a debauch, and was discharged the following day.

CASE IV.—Sadie H., a female mulatto, twenty-one years old and a prostitute, at about 9 P.M., May 3d, bought a mixture of glycerin, f℥ij, and laudanum, f℥ij, took the contents, entire, outside of the drug-shop, and fell on the street on her way home. She was picked up, placed in a carriage and brought to the hospital, arriving about fifteen minutes after taking the mixture. On admission she was unconscious; her pupils were contracted, but respiration and cardiac action were but slightly affected. The reflexes were considerably lessened. The stomach-pump was immediately employed, and the woman regained consciousness sufficiently to drink a solution containing six grains of the permanganate. Apomorphin, gr. $\frac{1}{10}$, was then given hypodermatically, and the contents of the stomach, *i. e.*, the permanganate solution, were ejected, being light-brown in color.

In a half-hour after admission the woman was well enough to be taken home in a carriage by friends, and little the worse for her dangerous experiment.

Epileptic Colonies.—At the last business meeting of the Allegheny County Medical Society, a series of resolutions was passed strongly commending the so-called colony system as the best known plan of caring for the indigent epileptics of this State. Drs. C. C. Heisman, T. M. T. McKennan, and T. D. Diller, were appointed a committee to urge the State Society at its coming meeting in Philadelphia to adopt the same resolutions, and take measures to bring the matter before the Legislature.

PATHOLOGIC NOTE.

TWO CASES OF RUPTURE OF THE ESOPHAGUS.[1]

German Hospital, Philadelphia, Pa.

SERVICE OF L. WOLFF, M.D.

[Reported by ARTHUR J. PATEK, M.D., Resident Physician.]

IT would be difficult to find a more typical case of rupture of the esophagus, with the classic symptoms pertaining thereto, than the one about to be reported. Interest is centered in this case, not because of its conforming in its symptom-complex to the requirements of the lesion; not because of rarity of occurrence, for rupture of the esophagus is not so uncommon; but because of the peculiar circumstances surrounding the case, which are more or less mysterious and leave much room for doubt and speculation.

CASE I.—F. H., a German, thirty-two years old, weighing over two hundred pounds, is said to have been a man of good habits and to have indulged freely in athletics of a mild character. Though an actor by profession, he is said to have used stimulants very moderately, more than equalizing this moderation, however, by a liberal indulgence in food. More noticeable than the quantity of food taken was the excessively rapid manner of its ingestion. The man had been, as far as it has been possible to ascertain his previous history, entirely free from any dyspeptic annoyance. None of his associates had ever heard a complaint of illness on his part, nor had he ever consulted an intimate friend of his who was a physician. Moreover, no medicine of any kind was found on his person or in his room. This unanimous expression of opinion, coming from the man's constant and intimate associates, must certainly receive some consideration in summing up the merits of the case.

On Thanksgiving day of 1893 the patient claimed never to have been in better health, and partook of a hearty dinner. An equally hearty meal was indulged in with friends in the evening, and as the man was in the habit of lunching freely between meals, it is safe to assume he may have done so on this day also. At 7.30 in the evening, while behind the scenes at the theater, he suddenly complained of a sense of fulness in the epigastrium, remarking that possibly a rich dish of which he had partaken may have disagreed with him. Very shortly thereafter he gave a distinct cough, and, a sense of nausea probably overcoming him, he inserted a finger into his mouth to induce emesis, then rushed to a basin near by, leaned over it, and in the act of vomiting cried out in German in great agony: "Something has broken. I heard it and felt it. Air! Doctor!"

The physician who was immediately summoned found the man in a state of collapse, with a feeble, running pulse, cold sweat, pallor, and suffering great agony, the pain being referred principally to the region of the stomach and back. A hypodermatic injection of morphin was administered, but gave no relief. Two hours thereafter the face and eyelids were noticed to be puffy. The patient became gradually worse during the night, suffering greatly from dyspnea and thoracic and abdominal pains. Several times fruitless attempts at vomiting were made. Urine was entirely suppressed. The patient was removed to the German Hospital at 10.30 the next morning, and was found in the following condition: Cyanosis was marked; orthopnea was profound; the pulse was almost imperceptible; the surface was cold—in fact, showing all the signs of collapse. In addition there was a noticeable puffiness of the face and eyelids, which proved to be due to interstitial emphysema. This emphysema extended down the neck as far as the clavicles, and was more marked anteriorly. He passed twenty ounces of urine, which was the first since the previous day. As the patient was in a moribund condition an accurate examination was out of the question. The signs of an extensive effusion in the left pleural cavity were, however, perfectly clear. Over the upper lobe of the left lung percussion elicited a tympanitic sound, and over the right lung there seemed to be normal resonance. The orthopnea was so intense as to preclude the possibility of a more satisfactory examination. The patient died two hours after his admission.

An autopsy was held four hours after death. With the first incision into the pleural cavity there came a gush of gas, indicating the existence of a pneumothorax. The odor emanating from the cavity was of the pungent character so peculiar to vomited matter. No gas escaped through the opening into the right chest-cavity. Upon removal of the breast-plate the left pleural cavity was found filled to fully two-thirds of its capacity with a grumous, brownish fluid, in which were floating many shreds of tissue that proved to be particles of partially masticated meat. The left lung was completely atelectatic. The right, though apparently normal in appearance and crepitant in part upon opening the chest-cavity, collapsed before its removal. It is quite likely that a small amount of pneumothorax existed here also. The pleural cavity on the left contained about three quarts of fluid, which was removed after a thorough examination had been made for the presence of a hard foreign body; the seat of rupture was then searched for.

On the left side of the cardiac extremity of the esophagus, just anterior to the diaphragm, a longitudinal rent, about one inch in length, was discovered. The finger, introduced into the opening, entered the stomach, and pressure on the stomach forced fluid matter into the pleural cavity through the rent. The esophagus, with the stomach attached, was removed. A thorough examination, macroscopic as well as microscopic, was made, with following result: The mucous membrane of the esophagus was smooth and glistening and in every respect perfectly normal; the stomach was in the same condition; the edges of the esophageal rent were clearly defined; there was no sign of ulceration of the mucous membrane, with the exception of a very small round area a quarter of an inch in diameter, opposite the line of rupture, which seemed to be devoid of epithelium. Antemortem or post-mortem maceration from contact with the gastric contents would be a sufficient explanation of this abnormality.

Rupture of the esophagus *per se* is not an uncommon accident attending pathologic conditions of this viscus. Spontaneous rupture of the esophagus is, however, so

[1] Read at the meeting of the Philadelphia Pathological Society, March 8, 1894.

rare an occurrence as to have called forth many a doubt as to the possibility of its existence. Reginald H. Fitz,[1] in an exhaustive study, collated all reported cases of spontaneous rupture of the healthy esophagus extant in medical literature, and found that since the first case (that of Boerhaave in 1724) there had been reported but eight cases, including one he reported, making a total of nine in over one hundred and fifty years. In a minute and thorough analysis of these nine cases Fitz throws out all but two—his own and that of Meyer—as instances of spontaneous primary rupture.

Zenker and von Ziemssen, in an article in Ziemssen's *Cyclopedia*, discountenance even the claim of Fitz as to the spontaneity of the two cases he reports, and give the following reasons: The normal esophagus cannot possibly be torn by the violence of its own contractions, inasmuch as the mucous membrane during contraction is more relaxed even than normally. It was shown that it required a direct weight of ten kilograms to rupture the esophageal wall when stripped of its external muscular coat, the mucous membrane alone, therefore, bearing the strain; and that the cases of Meyer and Allen, in each of which the rupture occurred in an effort to dislodge a piece of food that had become fixed in the esophagus, fall under this criticism, as the efforts at contraction could not possibly have ruptured the relaxed mucous lining, though the muscular coat have been torn, no force from without or within being, it is claimed, even a fraction of that which was successfully employed experimentally. Moreover, as the condition of the mucous membrane below the tear was in each case that described by King as the incipient stage of esophagomalacia, viz., absence of epithelium, the authors find themselves justified in concluding that all cases of so-called spontaneous rupture of the esophagus find their origin in a rapid esophagomalacia brought about by special circumstances.

It is difficult to meet the arguments of Zenker and von Ziemssen; but nevertheless several points present themselves for consideration. The experiment with which these authors wish to refute the possibility of spontaneous rupture seems an extremely fallacious one, as force exerted in the longitudinal axis of the esophagus by a dead weight is not of the same nature as that exerted in a fit of vomiting, as in the latter there is a *vis a tergo*, and consequently a momentum not experienced in the former, and a transmission of force not only longitudinally, but radially as well. Moreover, as the longitudinal muscular fibers predominate, the cohesiveness of the muscular tissue will permit the application of a greater amount of force with impunity when applied longitudinally than when exerted radially or laterally, and therefore the longitudinal rents from over-distention may readily follow the forcible ejection of a large quantity of gastric contents. There has been but one case reported in which a transverse rupture existed.

However, without granting the force of Ziemssen's argument against spontaneous rupture, it seems doubtful if even the two cases of Meyer and Allen, as reported by Fitz, can stand the test of criticism. In the case of Meyer, in which the rupture took place following efforts to remove a bolus of food, distinct reference is made to an ulcerated surface, and, more than this, there is a history pointing to an existing esophageal stricture.

The case of Allen, for which Fitz claims emphatic spontaneity, and in which the rupture was caused by the impaction of a foreign body, loses ground because of this very fact. A minute injury to the esophageal wall may have been sustained sufficient to have weakened it and permit of rupture by unsuccessful efforts at vomiting.

Since Fitz's report, three other cases of so-called spontaneous rupture of the esophagus have been reported. None of these, however, can bear criticism. The case of Dr. Tändler[1] occurred in a patient suffering from general septicemia; that of Stanley Boyd was in a patient suffering from Addison's disease, and, as is acknowledged, in view of the lack of symptoms during life, the rupture probably occurred either just before or after death. The case reported by Adams[2] was discredited by the report made upon it by the committee of the Pathological Society of London.

Though there is thus a total of thirteen reported cases of so-called spontaneous rupture of the esophagus, including the present one, it can be claimed for this that it is probably the only one not affected by any of the arguments advanced to disprove the spontaneity of such rupture. This statement is based on the fact that the patient had no illness that could in any way have had an influence on the cause of death; also, that from the presence of the classic symptoms (sudden onset, with pain and collapse, dyspnea, cyanosis, interstitial emphysema, suppression of urine) the rupture took place *intra vitam*; and that the perfectly normal condition of the esophagus and the clearly defined rent preclude the possibility of a pathologic condition prior to the accident. It may further be stated that, for these several reasons, spontaneous rupture of the esophagus is more clearly demonstrated in this case than in any previously reported.

While the case just detailed clearly illustrates rupture of the esophagus from within outward, the following case is of interest in this connection, as showing the reverse order—rupture from without inward.

Case II.—J. C., a colored man, thirty-nine years old, was admitted to the hospital on October 20, 1893. He had been married for four years, but had had no children. Only a scant history could be elicited, and what was learned had rather a negative bearing on the condition under consideration. Up to within nine months the patient's health had been good. He denied absolutely any history of syphilis. He was not given to excesses of any kind, and had worked hard at manual labor all his life. In the spring of 1893 he had had a severe cough, which persisted during the summer, though it did not prevent the man from pursuing his occupation. Two weeks prior to admission the cough had become quite aggravated, and there was much complaint of severe pain in the right side of the chest. For several days the patient was in a state of mild delirium. He applied to the Dispensary of the German Hospital for treatment of his cough, and was immediately admitted to the wards. Examination revealed the following condition: The pulse was fair in quality, and equally strong on both sides; the pupils were equal; dyspnea of

[1] American Journal of the Medical Sciences for January, 1877.

[1] Deutsche Zeitschrift f. prakt. Med., Leipzig, 1878, v, p. 63.

[2] Trans. Pathological Society, London, 1878, xxix, p. 113.

moderate severity existed. No dysphagia was complained of, though, the appetite being poor, the man restricted himself to a soft diet. The general state of health was fairly good.

On physical examination a pulsating tumor was detected on the right side of the chest, between the second and third ribs and just below the sternal insertion of the cartilages. There was a decided bulging here, though not of great degree. No bruit could be distinguished; the second sound of the heart was much accentuated; the first seemed quite normal.

One morning, ten days after admission, the patient was seen arranging his bedspread. Two hours afterward, when an attempt was made to rouse him, it was discovered that he was dead.

Upon post-mortem examination, the abdomen was found much distended, and the gastric area dull on percussion. An aneurism of the ascending arch of the aorta, corresponding to the area of visible pulsation observed before death, and containing soft clots, was found. The transverse arch appeared only slightly dilated. In the upper part of the descending aorta another aneurism was found. This was likewise filled with soft clots, and opened into the esophagus. The dilated stomach was incised in situ, and was found to contain a large blood-clot in the shape of an exact mold of the stomach. It was removed in two portions: the lower piece—a mold of the body of the stomach—was 9 inches long, 6 inches wide, and 4 inches thick; the smaller clot, which was a cast of the pylorus, measured 4 by 3 by 2 inches.

This case is particularly worthy of note, because of the dearth of symptoms, both subjective and objective, referable to the aneurism of the descending arch. In spite of the existence of two large aneurismal dilatations of the aorta, one of which was continuously encroaching upon and eroding the esophagus, no pressure-symptoms manifested themselves at any time. Even the erosion of the sternum occasioned few subjective symptoms; nor was there any dysphagia to point to the existence of a second internal tumor. Furthermore, neither pupils nor pulse presented the irregularities so commonly met with in aneurisms of the thoracic aorta.

NEW DEVICE.

A UTERINE IRRIGATING TUBE.

BY FRANCIS L. HAYNES, M.D.,
LOS ANGELES, CAL.

SEVERAL years since I devised the irrigating tube here pictured, and which has since been used by my associates and myself with great satisfaction in more than one

thousand cases. Its great merits are: (1) that it can be introduced very readily through a cervix that is but moderately dilated; (2) that it is almost impossible to obstruct the outflowing current; (3) that it is readily sterilized by the ordinary methods; (4) it is not materially affected by any antiseptic solution.

MEDICAL PROGRESS.

Primary Sarcoma in a Nine-months-old Child. — COHN (*Berliner klinische Wochenschrift*, 1894, No. 11, p. 266) has reported the case of an infant, nine months old, that came under observation on account of a swelling in the right temporal region that had been noticed for two weeks. For a week the right eyeball had been prominent and for a few days there had been vomiting. The child, though pale, appeared well nourished. The tumor was found to be attached to the bone, but not to the overlying skin; it extended anteriorly to the upper margin of the right orbit, posteriorly to the lobule of the ear; its surface was smooth and its consistence soft, in places yielding a sense of fluctuation. Further examination disclosed the presence of five additional isolated tumors, as large as cherries, behind the left ear, and one at the vertex of the skull. All appeared to have the same consistency and constitution. Puncture of the largest, however, failed to disclose the presence of fluid. On digital exploration of the mouth, the right retro-pharyngeal space appeared encroached upon. The liver extended two inches below the costal arch in the mammillary line; its surface was smooth, its margin sharp. The apex of the spleen was palpable below the left costal arch. In the depth of the right lumbar region a spherical tumor could be felt and which was separable from the liver. The urine did not contain albumin or morphologic elements. The subsequent course of the case was only noteworthy for the rapidity with which the tumors increased in size. The eye became further protruded, until its movements were greatly interfered with, and finally the cornea was lost by suppuration. The antrum of Highmore was ultimately invaded and a hard prominence became evident in the hard palate. The occipital and deep cervical glands became enlarged. The tumor in the right lumbar region increased correspondingly in size, extending beyond the middle line. A few days before death it was possible to distinguish that this mass was made up of an upper, larger, and a lower, smaller part, separated by a distinct fissure. Death took place from exhaustion, two and a half weeks after the child came under observation. Upon post-mortem examination the mass in the right lumbar region was found to consist of a homogeneous, soft, spongy neoplasm of the right adrenal body, in places whitish, in other places reddish in color, and below which was the right kidney, in the cortex of which were also multiple small new-growths. The glands around the hilus of the kidney were enlarged and coherent. The left kidney was enlarged and contained numerous nodules in the cortex and on its surface. The left adrenal, as well as the pancreas and the spleen, was normal. The liver was tilted upward and forward by the enlargement of the right adrenal. An adventitious nodule was found in the fissure for the round ligament. The surface of the left ovary presented two tiny nodules. The mesenteric glands were slightly enlarged and, on section, grayish-

red. Upon the outer aspect of the thorax, corresponding with the osteochondral junctions of the fourth, fifth, and sixth ribs on the right side, were small, pale, soft tumors. On the inner surface of all of the ribs on the right, with the exception of the first and the ninth, at the osteochondral junction, there were distinct nodular swellings, while the inner periosteal lining of the corresponding ribs was thickened diffusely and homogeneously throughout its whole extent. The thymus gland was normal. Histologic examination showed the tumor of the right adrenal body to be a medullary sarcoma, containing in part round cells, in part polygonal cells with large nuclei. In many places, under high powers of the microscope, fatty metamorphosis was distinguishable.

Non traumatic Subcutaneous Emphysema.—BROCKBANK (*Lancet*, No. 3684, p. 858) has reported the case of a youth, seventeen years old, who came under observation on account of a slight cough and of swelling of the face and chest. It was related that four days previously, on awakening, the patient had felt a pain in the left mammary region, with a point of maximum intensity about one inch outside and below the nipple. The pain was sudden in onset and not preceded by coughing. It seemed to come from the back, was sharp, and restrained breathing. After the pain had continued for some hours it was suddenly observed that the right cheek had become swollen. The breathing had by this time become difficult, and there was a desire to cough, which was restrained by the intense pain about the nipple. The left cheek soon became swollen, the eyelids a little later, and, finally, the front of the neck and the chest became involved. The patient was now suffering from great dyspnea and much distress. An incision three-quarters of an inch long was made down the center of the manubrium sterni, and air could be heard to escape. This was followed by considerable relief, but the swelling did not decrease much, and the patient felt ill and was short of breath. After a little while the swelling permanently subsided. On physical examination there was found to be impairment of the percussion-resonance at the apex of the left lung, but no abnormal auscultatory phenomena could be detected. There had been an attack of acute left-sided pleurisy eight years before, and the youth had suffered with repeated abscesses at different times. There was a family history of pulmonary tuberculosis, but tubercle-bacilli could not be found in the sputum. The first sound of the heart was impure and low-pitched at the apex; the second was accentuated. At the aortic cartilage there was a faint systolic murmur, the second sound being normal. It is believed that as a result of ulceration through a bronchus of a suppurating mediastinal gland air found its way into the subcutaneous tissues; the opening closed in a short time and the air was absorbed.

Return of Knee-jerks in Posterior Spinal Sclerosis.—At a recent meeting of the Association of German Physicians of Prague, KRAMER (*Wiener medizin. Presse*, 1894. No 11, p. 424) presented a case of progressive paralysis complicated by posterior spinal sclerosis in which after a long absence the knee-jerks had returned. Reference was also made to two other cases of the same kind that had terminated fatally and in which careful post-mortem examination failed to disclose any anatomic basis for the unusual phenomenon. In these cases the knee-jerk returns in association with apoplectiform or epileptiform attacks, or even spontaneously, remaining present for a long period, at times upon one side, at other times upon the other side, to disappear again or to continue until death takes place. The explanation offered is that with the slight amount of muscular tonus ordinarily present the few remaining intact fibers of the posterior columns are unable to complete the reflex, but that with an increase of the muscular tonus, such as occurs in connection with apoplectiform or epileptiform attacks, a tap of the patellar tendon is sufficient to induce such stimulation of the anterior horns as to bring about the reflex action.

Peptonuria.—In an extensive series of observations covering 121 cases of 49 different diseases and including 537 individual examinations, ROBITSCHEK (*Zeitschrift f. klin. Medicin*, Band xxiv, Hefte 5, 6, p. 556) found that peptonuria occurs when, as a result of some morbid process, peptone enters the blood in solution and is eliminated by the kidneys. As far as could be determined the normal puerperal state is the only physiologic condition attended with the existence of peptonuria. As a rule, the existence of peptonuria is an indication of the occurrence of tissue-disintegration in some part of the body. The manifestation is, however, of but subordinate significance, occurring, as it does, in the most varied conditions and at different stages of the same disease, without apparently influencing the ordinary course of the disease. As a symptom, however, and in conjunction without other manifestations, peptonuria may prove a valuable aid in diagnosis and prognosis—*e. g.*, being absent from meningitis and acute articular rheumatism. In the present status of the subject "pyogenic peptonuria" is the only variety to which notable significance is to be attached.

The Relative Weight of the Liver and the Spleen in Mammals.—From personal observations, together with the results of the work of other investigators, RICHET (*Archives de Physiologie Normale et Pathologique*, 5e sér., t. vi, No. 2, p. 232) has arrived at the conclusion that in the different species of mammals the volume of the liver varies with the relation between the weight of the body and the extent of exposed surface. In a general manner it may be said that the volume of the liver is proportional, on the one hand, to the extent of exposed surface when the animal is large, and, on the other hand, to the bodily weight when the animal is small. In man, and in all animals in which the liver is large in relation to the extent of exposed surface, this fact is to be explained by the necessity of increased chemic combustion to supply the deficiency due to the absence of a natural protective covering for the integument. It was found that the weight of the spleen in the various mammals is proportional to that of the body, being on an average 2 grams per kilogram, with a maximum of 3.8, in man, and a minimum of 0.54, in the rabbit.

Acute Puerperal Cellulitis and True Pelvic Abscess.—At a recent meeting of the Philadelphia County Medical

Society, DR. CHARLES P. NOBLE reported seven cases demonstrating:

1. That in the puerperal state, pelvic cellulitis and true pelvic abscess occur as the result of septic inflammation.

2. That inflammation may spread from the vagina or uterus along the pelvic lymphatics to the broad ligaments, without involving the Fallopian tubes.

3. That peritonitis can be set up by the spread of inflammation from the broad ligaments to the peritoneum, without involvement of the Fallopian tubes.

4. That very extensive pelvic exudates and intraperitoneal adhesions can be absorbed.

Toxins in the Urine during Constipation.—At the recent International Medical Congress, SPALLACI (*Le Mercredi Mèdical*, 1894, No. 15, p. 175) reported that the inoculation of rabbits and frogs with extracts obtained from the acid urine of individuals suffering with constipation of from seven to eleven days' standing, gave rise to stupor, muscular weakness, general tremor, tetaniform contractions, hypothermia, followed by hyperthermia and rapid death; phenomena more profound than those induced by the injection of extracts of urine passed in the absence of constipation.

THERAPEUTIC NOTES.

Senecio Jacobœa for Functional Amenorrhea.—Having learned that common ragwort (senecio Jacobœa) made into tea, was extensively employed in many parts of England in the treatment of various menstrual disorders, MURRELL (*British Medical Journal*, No. 1735, p. 619) prepared a 1 : 10 tincture, of which he ascertained the medicinal dose to be two drams. He also prepared a 1 : 1 liquid extract, of which he ascertained the dose to be twenty minims. He administered one or the other preparation four times daily to women suffering from menstrual derangement, and found that it answered well in cases of amenorrhea. He also used an active principle known as senecin, the minimum dose of which is two grains three times a day. It is believed that senecio aureus has an action similar to that of senecio Jacobœa. The drug was found useful in cases in which the menstrual function, having been performed regularly for some years, was suddenly suspended as the result of exposure to cold. In the majority of cases the period is not reëstablished until the drug has been taken for from ten days to two weeks, but sometimes the desired result is brought about considerably earlier. In cases in which the amenorrhea is associated with anemia senecio fails, but if after giving iron for a suitable period menstruation does not occur, senecio may answer better. Senecio answered admirably in cases of amenorrhea following parturition, when anemia was not a prominent symptom. The drug also proved useful in some cases in which menstruation had not yet been established. It is believed that senecio not only anticipates the period, but that it also increases the discharge. In many cases it relieves the accompanying pain, and not infrequently the headache from which some women suffer at such times. In one instance the administration of the drug was coincident with the disappearance of a profuse leukorrhea, from which the patient had suffered for months. The opinion is further expressed that senecio deserves to rank as an emmenagogue with potassium permanganate and manganese dioxid.

Injections of Mercuric Chlorid in the Treatment of Echinococcus of the Liver.—BLUMER (*Corresp.-Blatt für Schweizer Aerzte*, 1894, No. 7, p. 216), has reported the case of a woman who had suffered with an echinococcus of the liver for fifteen years, attended with jaundice, thirst, diuresis, itching, and emaciation. Exploratory puncture, followed by aspiration, gave exit to five and one-half quarts of a homogeneous, yellowish, emulsion-like fluid, but in the course of a few days the cyst had resumed its previous proportions, with a return of troublesome symptoms. After the lapse of several weeks the cyst was again punctured, but it could not be entirely emptied, as the canula repeatedly became obstructed by flakes. After about an ounce of fluid had been removed, five drams of a 1 : 1000 solution of mercuric chlorid were injected into the cavity of the cyst. As the swelling did not become notably reduced in size a third puncture was made, a larger trocar being employed, four quarts of homogeneous, dirty-amber fluid evacuated, and an ounce of mercurial solution again injected. The tumor, nevertheless, rapidly increased in size, but did not reach its former proportions. The general state of the patient now notably improved, and the condition gave promise of being on the way to gradual subsidence.

The Injection and Congelation of Oil for the Control of Muscular Spasm.—CORNING (*New York Medical Journal*, No. 802, p. 449) proposes for the control of troublesome muscular spasm the injection into the affected muscles of an oily substance having a solidification-point a little above the temperature of the body. The method was successfully employed in one case of violent clonic spasm of the splenius capitis muscle. The injected fluid consisted of oil of theobroma to which a sufficient amount of paraffin was added. The injection was made by means of a large syringe, armed with a stout, hollow needle, 800 minims of the fluid being used. It is recommended that the injection be made while the muscle is extended, even though it be necessary to administer an anesthetic for the purpose. The oil should be distributed as well as possible throughout the affected muscle. After the oil, made liquid by warming, has been injected, it is hardened by the application of an ether-spray or an ice-bag. Too much should not be attempted at one sitting. Supplementary injections may be made after the first at intervals of three or four days.

For Sea sickness.—

℞.—Antipyrin. . . . . gr. xlv.
Cocainæ hydrochlorat. . . gr. jss.
Caffein. . . . . gr. iv.
Strychnin. sulphat. . . . gr. $\frac{1}{5}$.
Spts. vini gallici . . . ℥ijss.
Aquæ destil. . . . ad f℥iij.—M.

S.—A tablespoonful before embarking, and thereafter thrice in twenty-four hours.

ROQUETTE, *Med. Press and Circular.*

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THE DIAGNOSIS OF HYSTERIA.

IT has been claimed by French observers that nations are exempt from hysteria in inverse proportion to the candor and intelligence of their medical writers. This is a sweeping assertion, so far as intelligence is concerned, because some of the nations whose medical writers state that they are exempt from grand hysteria are not devoid of intelligence, but so far as candor is concerned we are disposed to regard the claim as true. It is certain that an extraordinary prejudice and ignorance are displayed occasionally by writers in the English language, both in this country and in Great Britain, regarding both the literature and the clinical phenomena of hysteria. This has led, and still leads, to the erroneous reporting of atypical cases of the grand neurosis under artificial and inexact terms, and to the claim that such cases are "heretofore undescribed." Our American literature furnishes numerous examples of this, which if collected, digested, and critically examined would probably surprise many and convince some that our assertions here are not unfounded. We recall a recent glaring instance in which even an ordinary hysteric stigma was reported under a false title in a prominent American periodical as heretofore undescribed, whereas there exists a special French monograph on the identical subject, illustrated with numerous cases.

We are impelled to think that in Great Britain this prejudice is even more marked, and that the attitude of some writers there is that of persistently refusing to see or to be taught. We are not unmindful of the contributions of British writers to the subject of hysteria. We recall BRODIE'S classic (almost forgotten at home; nowhere so appreciated and cited as in France) and the recent contributions of PAGE and of THORBURN. But these writings only emphasize by contrast the fact that the average British writer does not, and often will not, recognize hysteria in its most palpable forms. It is within a comparatively recent period that REYNOLDS, in his *System of Medicine*, asserted that heredity has no influence in causing hysteria, and that GOWERS affected to think that hysteria in his native island was something radically different from this neurosis in France. The lack of power of systematic description, of what we may call the nosologic instinct, is especially conspicuous in writers on this subject across the sea. Their papers are confused and confusing; they lack the arrangement, the accuracy, and the convincing power that come only from a writer who has thoroughly mastered and *believes in* his subject.

We are inspired to these reflections by the perusal of a paper in the *St. Bartholomew's Hospital Reports* on "Two Cases of General Spastic Rigidity." The cases were quite remarkable, but not, as the observers appeared to think, of a kind unheard of, even in England. The first case occurred in a girl, thirteen years of age, and followed a trauma and an attendance at a "demonstration" meeting in Hyde Park. The patient had extreme spastic paralysis affecting all the muscles of the body, right-sided paresis, pyrexia for three weeks, dysphagia, dysphasia, impaired consciousness at times, loss of control over sphincters, emotional condition, whining voice, inspiratory noisy laugh, and progressive and extreme emaciation. There were no bedsores. The sensory conditions and the eye-grounds were not critically studied, nor is any note made of hysterogenous zones. There were twitchings and occasional tremor of a wide rhythm. Attempts at suggestion, hypnotism, and the use of esthesiogenic agents were not made, but reliance was placed on mercury and potassium iodid. Anorexia of a truly hysteric type was present and led to extreme wasting. The patient had a markedly neurotic

family history—an uncle and a great-aunt had been insane and the maternal grandmother was subject to "fits." The case resembled in some respects the cases of *anorexia nervosa* reported some years ago by GULL, although the authors of the paper do not recognize this fact. The conspicuous hysteric stigmata of the case must be recognized by all students who are at all familiar with the literature of hysteria, although the case is not critically reported. In view of this fact, it is curious to read the authors' comments "that at first many of the symptoms strongly suggested the idea that there was an hysterical basis for them; but the presence of fever, right-sided paresis, and wasting, with mental clouding, soon disposed of this view"(!). Hysteric pyrexia is now well recognized, and such common stigmata as right-sided paresis, and wasting, with "mental clouding," do not dispose of the view at all. No satisfactory explanation of the pathology of the case is offered, but the whole affair is left in an exceedingly doubtful and confused state.

The second case, also in a girl of thirteen years, followed the death of the patient's mother, thus illustrating the fact that the death of near relatives is a very common cause of grave hysteria in children. The onset was marked by a convulsive attack, which, as is well known, is often the immediate exciting cause of the permanent stigmata in children. Then followed, in natural sequence, stupor, paraparesis, slight nocturnal pyrexia, universal rigidity of the voluntary muscles, trismus, peculiar emotional mental state, delusions, hallucinations, insomnia, whining voice and dysphasia, inspiratory laugh, extreme emaciation, loss of control over the sphincters, absence of bedsores, increased reflexes, tremor, and sweating. Sensation, it is stated, was not affected, nor were the visual fields contracted, but considerable doubt remains as to the accuracy and thoroughness of the tests. But even discounting the absence of sensory stigmata, surely there remains in the foregoing list enough of the typical hysteric symptoms to mark the case indelibly. If it was not hysteria, what was it? Why cast doubt upon the diagnosis of such a typical case of hysteric paralysis and anorexia? Why deny to it its proper name? Why call it by another name, which is not a name, but only the label of a symptom? Why devote two pages, as do the authors, to an ineffectual and not very intelligible effort to explain the case away? We cannot answer these queries in the light of modern science. The work done in France under the guidance of CHARCOT, with its intelligibility, its reasonableness, its luminous description, its accuracy of diagnosis, its universal applicability, its successful therapy, alone furnishes the argument against, the commentary upon, and the condemnation of, all such loose, confused, and misguiding reports. The assumption by the authors that these cases were instances of some hitherto unheard-of and mysterious type of meningitis is entirely unfounded and cannot be entertained for a moment. The hint that they were, likewise mysteriously, "functional," as distinct from hysteric, is a suggestion in pathology so crude as to relegate it to the level of the ideas that marked the infancy of the science, when men talked of vapors mounting from the uterus to the brain. Finally, the assertion that the diagnosis of these cases is not clear, an assertion made by both these authors, is directly in the face of some of the most scientific clinical work of the present century, which has been done, too, within a day's journey of London.

The necessity for the correct diagnosis of hysteria transcends in importance to-day almost any other strictly clinical subject in medicine, and even in surgery. The science of diagnosis is the basis upon which rests all our medical and surgical art. The complexity of modern life, the vast increase in populations, and the corresponding increase in the neurotic element permeating all social strata, bring the subject of hysteria and the hysteric factor in disease constantly into the foreground of practice. Its insidious approach, its ubiquity, its counterfeit presentment of all other pathogenies, will continue to be observed and noted by the wise in all departments of clinical work. In this aspect, the merits of the work and the permanence of the standards of the eminent French neurologist, who has just deceased, must continue to meet an increasing recognition, and will constitute, perhaps, his most enduring hold upon fame.

THE TEACHING OF SANITARY SCIENCE IN NON-MEDICAL SCHOOLS.

REFERENCE was made in a recent number of THE NEWS to the defects in the instruction in physiology as given in common schools. The object of this instruction is essentially sanitary, as the legislation directing it was avowedly promoted by temperance organizations, with the hope that the principles thus instilled into youthful minds would

lead to abandonment of the use of alcoholic beverages. It has been unfortunate that the end has been allowed to justify the means, and that a strictly scientific presentation of the facts of physiology has not been made the requisite for the text-books adopted.

Much is expected by the promoters of such methods, and time alone will show whether satisfactory results are to be obtained; but there can be little doubt that books alone will not accomplish much, for children require to be taught and not merely given reading lessons. At a meeting of the Michigan State Board of Health, lately, DR. BAKER, well known in connection with the work of that Board, brought forward the question of establishing chairs of sanitary science in the two State schools in which teachers are educated. He pointed out that instruction in hygiene is compulsory in all schools receiving State aid, and yet no provision is made for the training of persons to carry on this instruction. The questions thus raised will very likely extend to other States, and it will be worth inquiring briefly into the plans suggested.

As regards the public schools, it must be said that the text-book is one of its familiar demons, and a dangerous one. Not only does much corruption, in a simply financial way, surround this department, but these influences operate also to endanger the merit of the works chosen. In the higher institutions not under public control, especially in medical schools in which the individualism of the instructors is best preserved, the merit of the text-book secures it a pretty fair field, but the books used by the public schools are usually selected by managing boards notoriously composed largely of persons neither highly educated nor familiar with teaching work, and the basis of selection is sometimes not safe for publication. If there is to be generally diffused instruction in sanitary science by teachers specially trained and employing text-books specially prepared, it will be by no means easy to secure a satisfactory method. There will be need of a graded series, the simplest essays being adapted to the youngest pupils.

No task in education is more difficult or more perilous than to instruct school-children in applied sciences, especially in those sciences that are not exact. The main objects of the lower schools are to train developing minds in methods of study, and to teach fundamental branches, such as language, geography, and mathematics. Upon such topics there is substantial agreement everywhere. It is expected also that schools shall have regard to morals and manners, but it is doubtful if either is much looked after. On the so-called "common branches" there is little difficulty in securing competent teachers, and little liability to erroneous teaching. All text-books on English grammar are in substantial agreement; the methods of involution and evolution are taught in pretty nearly the same manner in all arithmetics; and although atlases may differ in artistic merit and freshness of information, the essential facts of geography will be presented in all.

When, however, a progressive science is to be taught, a grave difficulty arises. New discoveries in hygiene are continually occurring, either widening our field of information or demonstrating the error of former views. It is essential that a teacher should keep in touch with these changes, and this can only be done by steady perusal of the literature of the science. Few common-school teachers, however, will give such attention, but will rely on the text-book. This, even at its highest development is sure to be behind the times, and the cheaper forms are likely to be prepared by professional school-book writers, who are mere compilers.

The institutions at which DR. BAKER suggested that normal courses in sanitary science should be given are the State Normal School and the State Agricultural College, and it is not unlikely that a demurrer will be entered to the plan to develop such teaching entirely within non-medical schools. The study of hygiene involves much medical knowledge, and sometimes requires a degree of freedom of discussion and familiarity with physiology not usual in lay-schools. It seems more logical to regard properly educated physicians as the safest instructors in this science and to discourage the general teaching of it by others. The workers in the science are almost all medical graduates, and it is to be properly studied, not by means of a single chair at some State school, but at a properly equipped institute of hygiene conducted under the auspices of a medical college.

It is hoped that the day is not far distant when the importance of systematic instruction in medical jurisprudence and sanitation will lead to the establishment at some of the better-equipped American medical schools of a comprehensive course leading to a degree in these branches, and thus develop a class of experts from which courts, and health-boards,

and school-boards may draw for competent witnesses, workers, and teachers in these fields.

Meanwhile the crude methods of instruction in hygiene, as in that of anatomy and physiology, go on in the schools, doubtless with but little practical result. The child recites in school-hours that alcohol and tobacco are injurious, and goes home to observe his parents drinking beer and his older brothers smoking. The influence of example destroys the influence of the text-book, and the harvest is uncertain.

EDITORIAL COMMENTS.

The Prevention of Tuberculosis.—There are in the City of Philadelphia (and in every large city) hundreds of families, including thousands of individuals, that receive *gratuitous* medical treatment. This service is largely rendered through the out-patient dispensaries, through dispensaries that furnish physicians for home-treatment, and through the district physicians of Bureaus of Charity. Among this class of patients are many that are tuberculous, and unable, for obvious reasons, even under the intelligent direction of the attending physician, to carry out proper measures of disinfection and prophylaxis. While there may have been justification for the desire to avoid antagonism by taking a too radical step in making obligatory the registration of all cases of tuberculosis, surely such an objection cannot be applied in connection with a class in the community confessedly without resources to adopt such measures as current knowledge concerning the diffusion of tuberculosis and other infectious diseases makes incumbent upon the individual, and in the failure of the individual upon the municipality and the State. If statistics were available, it might be possible to prove that this class includes actually the greater number of all tuberculous persons, for tuberculosis prevails most amid the conditions to which these persons are exposed: crowding, filth, want of sunshine and fresh air, vicious habits, food and clothing deficient in quantity and defective in quality, and ignorance. We wish to call attention here to dangers of such magnitude that they need be only mentioned to be realized, and to urge the notification of the Bureau of Health of all cases of tuberculosis in which proper prophylaxis and disinfection cannot or will not be carried out. These very cases illustrate, too, the need, the urgent, the immediate need, of hospitals for tuberculosis, where adequate isolation and therapeutic management can be practically carried out.

Good News from Texas.—A personal letter from Austin, Texas, brings to THE MEDICAL NEWS a message that should greatly encourage all who are enlisted in the war against quackery. Wherever one man is found with the courage to lead the fight, he will find the overwhelming majority of the profession behind him. The allies of quackery may make much noise and bluster, but they can never prevail in an assemblage of physicians. At its last annual meeting, just held, the Texas State Medical Association passed resolutions instructing the delegates to the San Francisco meeting of the American Medical Association to oppose any change in the Code of Ethics. This was almost good enough in itself, but the good men in Texas went further. On motion of DR. DAVID CERNA, of the Texas University Medical Department, Galveston, resolutions deprecating the advertising of nostrums in medical journals, and condemning the course of the *Journal of the American Medical Association* were carried after a lively debate, in which a great deal of fierce eloquence was exhausted in opposition. DR. CERNA, however, stood firm, and the motion to amend by striking out the special censure of the *Journal of the American Medical Association* was tabled, and the original resolutions passed by an overwhelming majority.

We repeat, then, that the good men are everywhere in the majority—Pennsylvania, Missouri and Texas. The American Medical Association itself has formally declared against the unholy alliance between the *Journal of the American Medical Association* and the nostrum-venders, and all that is needed to secure the final and complete triumph of the right is the courage to stand up and be counted.

Carolina Physicians and Nostrums.—We are gratified to note that our North Carolina colleagues have taken a positive stand in regard to the nostrum-question. In an admirable paper read before the Medical Society of Guilford County, DR. W. P. BEALL (*North Carolina Medical Journal*, vol. xxxiii, No. 4, p. 182) makes a cogent plea for the absolute rejection of the nostrum, and although a number opposed formal action and a few made confession, the following resolution was adopted by a large majority:

"*Resolved*, That the members of the Guilford County (N. C.) Medical Society pledge themselves to abstain from the use or indorsement of any manufactured drug or medicinal preparation which is offered directly for sale to the public, or any combination of drugs the formula of which is not submitted to our approval, and that we call upon our medical brethren throughout the country to unite in abating this growing evil which threatens our profession, both from an ethical and business point of view."

The traditions of an honorable and noble profession demand the suppression of the nostrum.

The Minority Report.—In remarkable contrast with the work of the majority of the Committee on Revision of the Constitution, By-laws, and Code of Ethics of the American Medical Association, the minority report, signed by DR. H. D. DIDAMA and published in *the Journal of the American Medical Association*, for April 21, 1894, is a straightforward, practical, scholarly and sensible production. We trust that the minority report will prevail overwhelmingly. It advises that no change be made in the Code of Ethics, and the changes that it suggests in the Constitution and By-laws all tend to improve and elevate the Association, better its work and strengthen its influence for good. The report of the majority of the Revision Committee tends to destroy time-honored safeguards against immoral and dishonest conduct, while endeavoring to avoid the revelation of overt opposition to the rules of morality and honor; but the report of the minority seems influenced only by a sincere desire to to make the Association truly representative of all that is good in the profession of medicine and openly and

irreconcilably antagonistic to all that is bad in the environments of the profession. The lines are now clearly drawn, and those who desire to preserve the good repute and honor of the profession will vote for the minority report.

SELECTIONS.

HOW TO PUT A STOP TO HEREDITARY CRIMINALITY.

On several previous occasions we have called attention to the stupidity which characterizes society's present method of dealing with habitual criminals. During the last few years the view has been steadily gaining ground that impulse to crime is an inherited taint; that the criminal is an atavistic creature no more to be blamed for his acts than the child of syphilitic parentage to be called to account for his unlovely skin, or bones, or teeth; and yet every year several hundred thousand habitual criminals, who have been convicted several times of brutal crimes, are allowed to go forth from the prisons to sow a crop of several hundred thousand children, who will be born criminals, and who will in due time prey on society, and require in turn to be imprisoned at society's expense. The whole tendency of science at the present day is to prevent rather than to go on from generation to generation treating disease. Thus have cholera, the black plague, smallpox been almost made to disappear from off the earth, and before many years we will be able to say the same of diphtheria, scarlet fever, measles, and consumption. Why should not the physician in charge of social disorders take the same preventive measures? Why go on eternally imprisoning and executing the aberrant race of criminals, when, by a simple and painless operation, an end could be put to the breed forever? Aseptic castration applied to every man or woman convicted twice of deadly assault or highway robbery, to every man convicted twice of rape or other abominable crime, would forever remove from them the power to inflict their beastly character upon thousands of innocent babes condemned from their birth to a childhood of misery and a youth of crime. There is nothing cruel or savage about the idea; for it is not to be compared with judicial murder which society fully justifies for her own protection. On the contrary, castration would be an ideal punishment, for all treatment of criminals should be directed to the sole object of preventing crime in the future rather than to have revenge for it in the past, and it would probably in most cases convert the criminal into a gentle and useful member of society. Not only would castration empty our prisons in a generation or two by the lack of supply of criminals, but even the immediate effects upon the diminution of crime in our day would be very marked, for the deterrent effect of this penalty would be even greater than the penalty of death itself. In our former article we quoted from the criminal statistics in England, showing that one criminal alone left behind him nearly one hundred descendants to occupy the prison-cells. We feel sure that this remedy has only to be more fully considered in a truly philanthropic light in order to receive the approval of our legislators and of public opinion at large. Without castration, society must, for its own protection, continue to treat cruelly and unjustly unborn generations of wild beasts in human form. It would be more merciful to them as well as to their innocent victims if the criminal class should, by the above means, forever cease to be.—*Canada Medical Record.*

AN INSCRIPTION.

According to a newspaper report, one of Allegheny's philanthropic Select Councilmen proposes to present a drinking-fountain to that fair city. As all well-regulated fountains should have an inscription, we would suggest the following:

Erected to the memory of 161 citizens who drank of this water and died of typhoid fever during the year 1893. This water is warranted to be drawn from the Allegheny River at a point where the discharges of eighteen sewers of Fittsburg are mingled with the stream, and each drop contains on an average 200 bacteria.

These 18 sewers, we might add, drain an area of 7000 acres—more than two-thirds of the entire territory of Pittsburg, exclusive of the South Side. Some of them pour their contents into the river a short distance above the influent pipes of the Allegheny water-works, while others are situated irregularly for five miles above, so that the entire volume of water must become contaminated by the Pittsburg sewers, not to mention the surface drain from upper Allegheny and the numerous towns along the Allegheny and its tributaries. The discharges from the West Penn Hospital patients find their way into the river at a point that is specially well adapted for transference into the Allegheny reservoir, and as many fever-patients are treated there during the summer and fall months, when the stage of the water in the river is usually low, the prevalence of fever and death in Allegheny is to be expected, and the source of the infection is not difficult to trace.—*Pittsburg Medical Review.*

MEDICO-LEGAL WISDOM.

The New York Medico-Legal Society has some decidedly queer legal members. One of these, ex-Judge Abram Daly, recently appeared in advocacy of a bill emasculating the medical practice act in favor of "Christian Scientists," clairvoyants, etc. He advanced the following "reasons":

If "Christian science" did not cure, at least it did no injury. It was as unjust for the legislature to say how a man should be cured as it was for a railroad company to say that a man should travel on their road. He said that one daughter of his had been cured by a clairvoyant, who had diagnosticated her case after a physician had failed. He mentioned another case, of a daughter who had died because of an incompetent physician. He was in favor of the bill because of the freedom of practice it accorded. The fighting among doctors was such that it was necessary that more freedom be had.

It is a little difficult to see how self-respecting physicians can remain members of a society which admits such aberrant intellects.—*The Medical Standard.*

Dr. Ritter v. Hacker has been made Professor of Surgery in the University of Vienna, and temporarily conducts the clinic and delivers the lectures in place of Billroth, deceased.

REVIEWS.

Operative Surgery. By Th. Kocher, M.D., Professor at the University, and Director of the Surgical Clinic at the Berne University. With 163 illustrations. 8vo, pp. 279. New York: William Wood & Co., 1894.

Although Professor Kocher's writings are wholly unknown to the vast majority of surgical readers in this country, his name has by frequent quotation become so familiar to all that a book by him carries with it no slight prestige. The present volume is a translation—by whom does not appear. Unfortunately it is a very bad translation, marred by many inelegancies of style and obscurities of expression. We judge it to have been prepared by someone ignorant of anatomy, because of the frequent use of unrecognized words and the retention of many anatomic terms that should have been rendered into the equivalents known to English-speaking students.

Notwithstanding these grave defects, this work will be found of much interest, as setting forth the methods of a man who has had a large experience and who is evidently an independent thinker, accustomed to the unquestioning acceptance of his views. Its scope is limited, embracing only the strictly manipulative part of operations, without even descriptions of instruments. Its teachings are allied to those of the modern school of German surgery.

With regard to incisions, the author lays down the general rule that they should be made along the borderlines of nerve-distributions; so that in abdominal sections, for example, he prefers keeping to the median line instead of opening along the outer margin of the rectus muscle, because in the latter case the nerves supplying the muscle are divided. Again, he insists upon following in each region certain "lines of cleavage" of the skin, along which he claims that union takes place more readily; these are set forth in elaborate diagrams. We cannot but think that such refinements of detail are shown by the daily experience of many surgeons to be needless.

It seems somewhat in contrast with this that we find ourselves advised, for the exposure and removal of tumors of the base of the skull, to divide the hard and soft palate by a median incision, and to chisel away the horizontal plate of the palate with a portion of the vomer. The expediency of any interference whatever in cases of this kind is open to doubt.

The directions given for some of the operations on the trunk are at variance with those usually accepted. Thus our author prefers a transverse lumbar incision for nephrectomy; and recommends extending it forward, opening the peritoneum, and passing in the hand, so as to determine by palpation the condition of the opposite kidney. And he says that by extending a left lumbar incision forward, the exposure of the spleen can be effected. Surely an anterior section would be for either purpose as safe, and more satisfactory. A transverse incision is prescribed for suprapubic cystotomy. For castration, the direction given is "a transverse incision along the inguinal canal one finger's-breadth above Poupart's ligament, running in a median direction downward parallel to the median third of the ligament;" or, when the testicle is adherent or the seat of larger tumors, "a transverse incision in a frontal direction at the lower end of the scrotum." We fail to see why the testicle should not be approached directly in either case; but from the diagrams it would seem that the author's ideas are correctly rendered in the text.

Very full directions are given for finding the vessels and nerves in the various regions of the body.

For amputations in the continuity of the limbs, the oval method is preferred.

On page 225 the author states that he has resected "one-half of the pelvis," with the head of the femur; and that the patient "could walk without a cane, though he limped badly." We think that the mechanism of this walking should have been very fully explained, if possible.

As a text-book for students, this book seems to us to be of little value. But the experienced surgeon will find it interesting and profitable to become acquainted with methods which are unfamiliar to him, even if he should not see reason for adopting them in preference to those which he has learned to follow.

Department of Agriculture. Eighth and Ninth Annual Reports of the Bureau of Animal Industry for the Years 1891 and 1892.

The first seventy pages of this report are devoted to a description of the workings of the Bureau for 1891. It is stated that export cattle, after having been inspected, are marked with a numbered tag in the ear, which serves for their identification. By this means every animal can be traced to the very farm on which it was fed.

In the inspection of pork microscopic examinations are made of two samples of muscular tissue from each animal, and thus protection is afforded against trichinæ.

Experiments were made with the milk of two tuberculous cows. Eight guinea-pigs were inoculated and two fed with the milk. About seven months later, when killed, the animals were in good condition, and only one pig showed tubercles. Tubercle-bacilli were found in the milk of one cow shortly before death. The autopsies on the cows showed "extensive generalized tuberculosis," but no tuberculous lesion could be detected in the udders.

These reports are interesting, as they "thus favor the position of those who maintain that tuberculosis of the udder is necessary to an infection of the milk when the disease is not too far advanced." It is stated in reference to the udder that "when the tubercles are just beginning to form it may be wholly impossible to detect their presence during life by simple palpation of the bag." No one will dispute this, for the same statement might almost be made when examining it after death, for no tissue masks small tubercles better than that of the cow's udder, and one cannot be sure of the absence of tubercles unless every portion has been examined microscopically.

In the report for 1892 Dr. D. E. Salmon has a very good account of the successful treatment of lumpy-jaw, or actinomycosis in cattle, with potassium iodid. The effects of this drug on the ray-fungus are remarkable, large lumps being removed in a short time.

The paper is concluded with concise reports of numerous autopsies and eight plates showing cuts of cattle treated.

The next one hundred and twenty-eight pages are devoted to the best paper on Texas fever that has ever been written. After an historic review, the disease is traced step by step, all statements being backed by scientific investigations. All the recent methods are utilized in the examination of the urine, blood, etc. One cannot but admire the thoroughly scientific manner in which the etiology of this disease has been elucidated. In the examination the corpuscles were enumerated at different stages of the disease, and one is astonished at the tremendous fall in the number of red blood-corpuscles; thus, at page 200, the disappearance is spoken of as being at the rate, in one case, of nearly 1,000,000 per c.mm. a day for three days. No note is made of the percentage of hemoglobin. The different forms of the microörganism found in the blood in this disease are beautifully illustrated by colored plates. This organism has been named pyrosoma bigeminum. The cattle-tick, the chief if not the sole carrier of the disease, receives careful attention. This paper on Southern cattle or Texas fever, reflects great credit on the writers, Drs. Theobald Smith and F. L. Kilbourne.

The report ends with a copy of the laws for the control of contagious animal diseases.

An Illustrated Encyclopedic Medical Dictionary. By Frank P. Foster, M.D., and Collaborators. Vol. IV. New York: D. Appleton & Co., 1894.

Upon receipt of the final volume of Dr. Foster's great work we were at once struck by the fact that the last fourteen letters (Minn.–Zyth.) of the alphabet are included in the single volume, while the first twelve letters took three equally large volumes. We regret the condensation. Only a small proportion of the operations, of the signs and symptoms of disease, of parasites, of tests, of stains, etc., are included that should have found place in an "encyclopedic" work.

We also feel compelled to regret the rigid exclusion of eponymic terms, the personal nomenclature of disease, operations, symptoms, etc. However objectionable this tendency of naming facts may be, and we are second to none in acknowledging it, the lexicographer is primarily a historian, and for the convenience of his reader he should chronicle a fact so persistently common as this one. Elsewhere the good reasons against the practice may obtain. In excluding eponymic terms, the fact itself is often excluded, as, *e. g.*, Heberden's, Parrot's, and Schmidt's nodes, Neisser's method, Murphy's button, Neale's lung, many operations, Pajot's law, etc. Schönlein's Disease is not referred to by this title either under Schönlein, Disease, or Peliosis.

We note also a few other omissions that have caught the eye: Direct and Indirect Ophthalmoscopy; Mounding of Muscle; Paradoxic Deafness, Temperature, and Knee-jerk; Mururé; Alkaline Tide and Acid Tide; Toric Lens; Toxosozin; Hypertrophic Pulmonary Osteoarthropathy; Phantom Aneurism, Stricture, and Cell; Phaneroscope; Picro-saccharimeter; Pilastered Femur; Piperazin; Pithing; Pitre's method; Peach-fever; Pocketing; Plate-culture; Weismann's theory and his terms as to heredity; Mounting and Mounting-media, etc. A typographic error occurs in the word myeloplast. The important distinction between *sanitarium* and *sanatorium* is not made. To spell septum, *sæptum*, not even noting the fact by a cross-reference, seems ultra-conservative and reactionary. It seems strange and unpatriotic to omit from the list of spirits our American friend *spiritus frumenti*. We also regret a large number of failures in the cross-references, as, *e.g.*, *Syringomyelia*. The failure to find it under the cross-references results in non-definition of the word. In the two definitions *Salvatilla Vein* is located in two different parts of the hand.

But even if such almost unavoidable errors were far more numerous than they are, we maintain that they should be pointed out in no captious or hypercritical spirit; it would be wrong to mention them except as coupled with praise and gratitude for the noble example of American scholarship offered in the work as a whole by Dr. Foster and his collaborators. The somewhat strange omission of biologic terms from among the list of "collateral sciences" may not too much detract from our praise and the congratulations we sincerely offer upon the completion of a work so highly valuable to science and so frightfully onerous to the editors. We have here, as in no other completed English word-book of the kind, a gathering of systematized medical knowledge which must long remain a gift to the profession for which we may well be proud and for which we cannot be too thankful.

Politzer's Text-book of the Diseases of the Ear and Adjacent Organs. For Students and Practitioners. Translated by Oscar Dodd, M.D., Assistant Surgeon at the Illinois Charitable Eye and Ear Infirmary; Clinical Instructor of the Eye and Ear in the College of Physicians and Surgeons, Chicago. Edited by Sir William Dalbey, F.R.C.S., M.B. Cantab.; Consulting Aural Surgeon to St. George's Hospital. With 330 original illustrations. Philadelphia: Lea Brothers & Co., 1894.

Owing to the advances made in otology during the past few years, considerable difference is to be found between this and former editions. Much of this advance is due to the labors of the author himself, and we are glad to note that he has given us the results of his investigations upon the hearing, in a considerably enlarged chapter.

In the discussion of adhesive processes attending catarrhal otitis media, the various operative procedures suggested receive full attention. While the author's experience with these, particularly those of synechotomy of the crura of the stapes, and of excision of the whole membrana tympani, with extraction of the malleus and incus, has been somewhat extensive, he wisely declines to pass judgment as to their respective merits.

Further observation is necessary to demonstrate in precisely which cases we can hope for relief through operation.

A long chapter is devoted to suppurative otitis, and mention is made of influenza as a causative factor.

Intra-cranial diseases of otitic origin receive due attention, and the main directions for surgical treatment are given.

The essential points of difference, both in course and treatment, between primary and secondary inflammation of the mastoid, are well brought out.

A short description is given of the diseases of the nose and naso-pharynx and of their influence upon aural disease.

Numerous new illustrations have been added; the arrangement is much better than in former editions, and the translation is uniformly commendable.

HOLDEN'S MANUAL OF THE DISSECTION OF THE HUMAN BODY. Edited by JOHN LANGTON, Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital, etc. Sixth edition, revised by A. HEWSON, M.D., Demonstrator of Anatomy, Jefferson Medical College, etc. 311 illustrations. Small 8vo., pp. 803. Philadelphia: P. Blakiston, Son & Co., 1894.

A MANUAL for dissectors bears somewhat the same relation to a text-book on anatomy as that of a volume of clinical lectures to a didactic work on surgery. Each has its legitimate sphere, its special arrangement, and its appropriate style. Among its numerous competitors, Holden's *Manual* has always found a high place, its appreciation by students being shown by the demand for successive editions. As now issued, the book has been reduced in size by the employment of smaller type, and is thus rendered more convenient for use in the dissecting-room. We do not note any changes in the text.

While, as a rule, we are in favor of retaining the old-fashioned anatomic nomenclature, as has been done in this work, we think it would be well if the simplification of compound terms should be universally accepted, as, for instance, by dropping the word *mater*, and using only *dura* and *pia*. And, except in a very few time-honored instances, we would abandon the use of proper names in designating parts. What idea is suggested to anyone by "the valve of Hasner," or "the ampulla of Vater?" Why should the recto-vaginal pouch be called "the pouch of Douglas," or the lower end of the posterior sheath of the rectus abdominis muscle "the fold of Douglas?" Why should the student be required to burden his memory with these and like meaningless terms?

The illustrations in this work are drawn from very various sources, and are of all grades of merit, not only artistically, but as explanatory of the text.

A CLINICAL TEXT-BOOK OF MEDICAL DIAGNOSIS FOR PHYSICIANS AND STUDENTS, based on the most Recent Methods of Examination. By OSWALD VIERORDT, M.D., Professor of Medicine at the University of Heidelberg, etc. Authorized Translation, with Additions, by FRANCIS H. STUART, A.M., M.D. Third revised edition, with one hundred and seventy-eight illustrations, many of which are in colors. Philadelphia: W. B. Saunders, 1894.

THE favorable opinion we have expressed concerning previous editions of this work must be repeated in regard to the present edition. It is one of the most useful books in medical literature. The translation is not always smooth and the proof-reading is not yet perfect, for on page 142, *inspiration* is printed for *expiration*. No other error of the kind, however, was found in the course of our reading of the new edition and the drawbacks noted are, after all, slight. The peculiar value of the book lies in the fulness with which methods of examination are described, and the remarkably rich discussion of the significance of symptoms and signs, and of their association. Merely to read a page or two is an education in methods, and reference to the work for special points will always be found helpful.

A PRIMER OF PSYCHOLOGY AND MENTAL DISEASE. By C. B. BURR, M.D., Medical Superintendent of the Eastern Michigan Asylum, etc. Detroit, Michigan: George S. Davis, 1894.

THIS is the kind of a book that it is customary to damn with faint praise. It is a book of definitions. For those who need definitions in psychiatry it will be useful, and for those who are satisfied with them it will be sufficient. It is simple, intelligible, and harmless. Dr. Burr writes in his preface that "the association of the concept embarrassment and the concept commiseration, has produced the judgment to write this unambitious little book." This explains all. For those not acquainted with psychologic phraseology, it may be well to translate that Dr. Burr means to say that he has written his primer as a quiz-book for the members of a training-school class. It is a good book for its purpose.

THE YEAR-BOOK OF TREATMENT FOR 1894. A Comprehensive and Critical Review for Practitioners of Medicine and Surgery. In a series of twenty-four chapters, by eminent specialists. 12mo., pp. 497. Philadelphia: Lea Brothers & Co., 1894.

IN convenient form for ready handling and quick finding, well-indexed both as to authorities and subjects, this publication presents in well-digested articles, by authorities competent to judge and to choose, most that has been of value in the therapeutic literature of the year. The term treatment is liberally interpreted, including operative as well as medicinal measures, while bacteriology and hygiene have not been neglected. A "Selected List of New Books, New Editions and Translations" is a useful addition.

REPORT OF THE SURGEON-GENERAL OF THE ARMY TO THE SECRETARY OF WAR FOR THE FISCAL YEAR ENDING JUNE 30, 1893. 8vo, pp. 231. Washington: Government Printing Office, 1893.

THE report of the Surgeon-General deals largely with business matters, as well as with the discipline and sanitation of the army. Embodied in it there is an interesting account by Capt. L. A. Lagarde of a series of experiments as to the effects on the human frame of missiles of larger or smaller caliber, moving with greater or less velocity. This portion of the book is illustrated by fifteen plates, containing twenty figures—excellent specimens of wood-engraving.

About ninety pages are taken up with statistical tables. The composition of these, in any private printing-office, would have involved great expense. Possibly this is not a matter of consequence under the arrangements by which government work is done, but the result does not seem to us to be of such value as to justify the outlay of time and labor.

CORRESPONDENCE.

ENUCLEATION OF THE UTERUS.

To the Editor of The Medical News,

Sir: I have read with much interest the article in your Journal of May 5, 1894, by Dr. Paul F. Mundé, on the above-named subject.

It is, however, very pleasant for me to know, that to Dr. Mundé himself we owe the idea of enucleating the uterus from its peritoneal envelope, and thus reviving the old operation of Langenbeck.

In regard to the operation of Langenbeck, I will quote again from my second article (The Medical News, February 24, 1894), his description, which seems to me to show that his operation was a real enucleation.

"*Abstract of Langenbeck's method.* 'I now come to that portion of the uterus which, seen from the front, was inserted into the peritoneum as into a cloth. I also separated very accurately the substance of the uterus from the peritoneum, without cutting it, because otherwise the intestines might have protruded, and constantly drew out the uterus. I continued this separation to the upper rounded border of the fundus uteri, and then cut the uterus out of the peritoneum, in such a way that a small piece, which seemed to be perfectly healthy, remained connected with the peritoneum. This was consequently a true enucleation of the uterus out of the peritoneum, so that the latter, in connection with the vagina, formed an empty bag.' The ovaries, which Langenbeck thought he had removed, were found at the autopsy."

Dr. Mundé is perfectly correct in his statement of the difficulties of the operation in younger women, who have not reached the menopause. It is certainly a delicate piece of dissection to free the anterior surface of the neck of the uterus from its peritoneal attachments (more especially at that point which is immediately over the internal os uteri), but I venture very respectfully to dissent from the very high authority of Dr. Mundé, when he says that it cannot be done. As he justly says, my first case being in a woman of seventy-two years of age, was a very favorable one for the operation. The comparative ease with which the operation was performed on account of the relaxed condition of the peritoneal coverings probably made me more enthusiastic in advocating this method, than if my first operation had been upon a younger woman.

On February 23, 1894, I performed the same operation upon a woman, forty years of age, in whom the menstrual function was still active. The difficulties in this case, though much greater than in the first case, were not insurmountable, and the cancerous womb was successfully enucleated. The great difficulty met with in this last operation was the continual oozing of blood, which so obscured the field of operation as to render very difficult the careful dissection that is absolutely necessary in this operation.

The cardinal rules to be observed by the operator are, to use only the scissors curved on the flat, and not the knife during the operation, and to cut always toward, and never from the body of the uterus. During some portion of the time of operation an ordinary retractor was used to aid in peeling off the peritoneum from its attachments to the uterus.

I would like to refer Dr. Mundé to a paper read by Dr. John B. Deaver, before the Philadelphia Academy of Surgery, March 5, 1894, and published in The Medical News, April 21, 1894, pp. 446–448. On page 446 he says: "There is no doubt that the method of enucleation (of the uterus) is the ideal one, and should be adopted when the case is suitable for it." Further down on the same page he says (speaking of enucleation of the uterus): "I think this should be the operation of choice, in the early stages at least."

Dr. J. H. Wyethe, of Oakland, California, has kindly sent me a printed report of four cases, entitled "A New Method of Enucleation of the Uterus," and read by him before the Medical Society of the State of California, in April, 1892.

These four cases were operated upon during the years 1888 to 1890, and were all enucleations of large portions of cancerous wombs; in all these cases, however, a portion of the outer walls of the uteri was allowed to remain, so they can scarcely be called complete enucleations. The profound respect I feel for the immense experience and surgical skill of Dr. Mundé renders me very loath to differ with him in this matter. I feel compelled, however, to express my sincere conviction, which is, that in cases of cancer of the cervix uteri (especially when the disease is not too far advanced, and in old persons), the operation of enucleation of the uterus presents many and very great advantages, in the absence of shock and hemorrhage, over every other method of operation.

Respectfully,

Robert Reyburn.

HISTOLOGY OR OBSTETRICS?

To the Editor of The Medical News,

Sir: The requirements which the Committee of the Association of American Medical Colleges has decided upon seems, to say the least, very curious to me, when I see, *e.g.*, that 100 hours are required for histologic work, while I fail to see that a student should have attended half a dozen cases of labor.

Now I have spent many an hour on histologic work, but I cannot see that my patients are any better off on that account. On the other hand, every case of labor I have attended during my student-life has been of the most obvious service to my patients.

I, for my part, do not think that ever so many laboratory hours will make up for such glaring deficiencies in schools, and who would attend a school with a curriculum of four years that does not furnish such opportunities in obstetrics?

Respectfully,

Chr. Sihler.

Cleveland, O.

QUININ-IDIOSYNCRASY.

To the Editor of The Medical News,

Sir: Noticing the article of W. J. J. Paris, M.D., in The Medical News of April 14th, p. 419, I am impelled to report that I have in my practice two ladies who also suffer from an idiosyncrasy to quinin. Even grain-doses occasion much distress, with erythema, associated with severe dyspnea and other manifestations. In experi-

menting with them, I learned that by giving aromatic chalk and opium powder in combination with the quinin, no evil effects followed. My plan is to give the drug in small doses, say two or three grains, with double the quantity of the aromatic chalk and opium powder, repeated every hour or two hours until cinchonism is produced. I would cordially commend this plan in similar cases.

Respectfully,

F. W. Chitty.

Olar, S. C.

NEWS ITEMS.

The American Orthopedic Association will hold its eighth annual meeting at Washington, D. C., May 29, 30, 31, and June 1, 1894. The following program is announced:

"The Treatment of Severe Forms of Club-foot, by Edmon Owen, London. "Tarso-Clasis for Club-foot," by Nicholas Grattan, Cork. "The Abuse of Phelps' Operation for Club-foot." by James E. Moore, Minneapolis. "Phelps' Method for Talipes Varo-equinus," by H. P. Kaptyn, Abcande, Holland. "Phelps' Method for the Cure of Club-foot in Adults," by Wm. E. Wirt, Cleveland. "Phelps' Method of Treating Severe Forms of Club-foot," by Dr. Cordua, Hamburg, Germany. "The Place of Traction in the Treatment of Club-foot," by Newton M. Shaffer, New York. "Elastic Traction in the Immediate Treatment of Club-foot," by Bernard Bartow, Buffalo. "Some Observations on the Anterior Transverse Arch of the Foot and its Obliteration as a Cause of Metatarsalgia," by Joel E. Goldthwait, Boston.

"Final Results in 100 Cases for Operation of Deformities following Hip-joint Disease," by V. P. Gibney, New York. "The Treatment of Hip-disease and the Application of Lateral Traction," by Robert W. Lovett, Boston. *a*. "The Question of Priority in the Application of Lateral Traction to Relieve Intra-articular Pressure in Hip-joint Disease." *b*. "The Presentation of New Knee and Ankle Splints." *c*. "The New Improved Celluloid Corset." *d*. "An Original Operation for Wry-neck," by A. M. Phelps, New York. "Blanchard's Hip Splint," by Wallace Blanchard, Chicago. "What Results should we try to Attain in the Treatment of Hip-joint Disease," by Reginald Sayre, New York.

"Cases of Hoffa's Operation for Congenital Dislocation of the Hip-joint," by E. H. Bradford, Boston. "Lorenz's Operation for Congenital Dislocation of the Hip," by A. Lorenz, Vienna. "Congenital Dislocation of the Hip," by T. Halsted Myers, New York. *a*. "The Results in Talipes Varo-equinus after Phelps' Operation." *b*. "The Limits of Operative Treatment in Congenital Dislocation of the Hip," by Sigfred Levy, Copenhagen. "Congenital Dislocation of the Hip," by L. A. Weigel, Rochester.

"Peculiar Nervous Symptoms occurring in Pott's Disease of the Spine," by Leroy W. Hubbard, New York. "Relief of the Spondylitic Spine from the Concussion of Walking," by John C. Schapps, Brooklyn. "Spondylitis," by A. J. Steele, St. Louis.

"The Treatment of Old Neglected Cases of Deformity following Poliomyelitis," by S. L. McCurdy, Dennison. "Observations on Rachitic Distortions of the Neck of the Femur in Adolescence, and its Significance," by Royal Whitman, New York. "Infantile Apoplexy and Paralysis, and some of their Consequences," by W. J. Little, England. "The Etiology of Deformities in Knee-joint Disease," by A. E. Hoadley, Chicago. "The Care of the Bony Frame in Infancy and Childhood," by J. B. Ransom, Dannemora, N. Y.

"Diseases of the Knee-joint," by J. D. Griffith, Kansas City. "Excision of the Knee for Relief of Crippling from Infantile Paralysis," by Ap Morgan Vance, Louisville.

"The Treatment of Lateral Rotary Curvature of the Spine by Non-restorative and Developmental Methods," by B E. McKenzie, Toronto. "The Improved Machine for Treating Scoliosis," by Max Schede, Hamburg. "Scoliosis," by A. B. Hosmer, Chicago.

"Excision of the Sac in Spina Bifida," by DeForest Willard, Philadelphia.

"On the Application of the Principle of Extension in the Treatment of Wry-neck," by Mr. William Adams, London, and Mr. R. W. de Sante, London. "Lorenz Osteoclast," by F. S. Coolridge, Chicago.

"A Case of Ankylosis of the Jaw in a Child; Resection; Recovery, with Good Motion," by Dillon Brown, New York.

"Excision of the Wrist-joint by a New Method," by Herman Mynter, Buffalo. "Disease of the Shoulder-joint," by W. R. Townsend, New York. Title to be announced, by W. J. Taylor, Philadelphia. Title to be announced, by W. O. Plimpton, New York. "Fixation and Traction in the Treatment of Fractures into Joints," by Ansel G. Cook, Hartford. Title to be announced, by James Kerr, Washington, D. C.

Flat-foot. *a*. "Its Etiology and Mechanism of its Production," by Newton M. Shaffer, New York. *b*. "Pathology, Prognosis, and Mechanical and Surgical Treatment," by T. C. Morton, Philadelphia. *c*. "Gymnastic Treatment," by H. Augustus Wilson, Philadelphia. Royal Whitman, New York; Sidney Roberts, Philadelphia; J. D. Griffith, Kansas City; Roswell Park, and others will take part in the discussion.

Rachitic Deformities, *a*. "Etiology, Clinical History, and Lesions," by A. Jacobi, New York. *b*. "Its Various Manifestations, Diagnosis, Differential Diagnosis, and Prognosis," by Benjamin Lee, Philadelphia. *c*. "Mechanical and Constitutional Treatment," by Samuel Ketch, New York. *d*. "Operative Treatment," by De Forest Willard, Philadelphia.

Paralytic Deformities, *a*. "Etiology, Clinical History, and Pathological Conditions producing them," by E. H. Bradford, Boston. *b*. "Varieties, Diagnosis, Differential Diagnosis, and Prognosis," by E. G. Brackett, Boston. *c*. "Mechanical Treatment," by John Ridlon, Chicago, and Joel Goldthwait, Boston. *d*. "Operative Treatment, Paralytic and Rachitic Deformities," by DeForest Willard, Philadelphia.

The American Association of Genito-urinary Surgeons will hold its eighth annual meeting at Washington, D. C., May 29, 30, 31, and June 1, 1894. The following papers are announced:

"Modification of Bigelow's Operation for Stone in the Bladder, designed to meet Cases in which the Prostate is Enlarged," by George Chismore, of San Francisco. "The Treatment of Hypertrophied Prostate," by J. William White, of Philadelphia. "A Suggestion as to

the Best Method of Removing Fibro-adenomatous Growths from the Prostate," by Samuel Alexander, of New York City. "Report of some Cases of Rupture of the Urethra," by Francis S. Watson, of Boston. "Remarks on the Treatment of Cystitis," by Gardner W. Allen, of Boston. "Treatment of Imperfect Transition of the Testes," by Samuel Alexander, of New York City. "Aëro-urethroscopy with a New Instrument," by William K. Otis, of New York City. "New Instruments and Apparatus," by F. Tilden Brown, of New York City. "Stone in the Bladder; Choice of Operation," by William H. Hingston, of Montreal. "Urine-leakage and Stricture-formation," by John P. Bryson, of St. Louis. "The Possibility of Overcoming Permanent Stricture of the Deep Urethra without Resort to External Urethrotomy," by J. Blake White, of New York City. "The Surgical Aspect of Impotence," by Edward R. Palmer, of Louisville. "Epithelioma of the Penis," by Edward Martin, of Philadelphia. "The Hygiene of Circumcision," by W. Frank Glenn, of Nashville. "The Question of Surgical Interference in Tuberculous Kidney," by John P. Bryson, of St. Louis. "Brief Report of a Case of Cystitis and Pyelonephritis due to the Colon Bacillus, requiring Nephrectomy," by F. Tilden Brown, of New York City. "Report on Irrigation of the Bladder and Urethra without a Catheter," by George E. Brewer, of New York City. "Catheterization of the Ureters in the Male," by William K. Otis, of New York City. "Exhibition of Calculus from the Kidney," by Edmund E. King, of Toronto. "Some Infrequent Symptoms of Disease of the Urinary Tract," by Alexander W. Stein, of New York City. "The Relationship of Syphilis to Stricture of the Rectum," by Robert W. Taylor, of New York City. "Two Cases of Syphilis having a Bearing on the Question of the Period during which the Disease is Communicable," by James Bell, of Montreal. "Excision of the Initial Lesion," by Edmund E. King, of Toronto.

A general session of the Congress will be held under the direction of the American Association of Genito-urinary Surgeons, on May 31st, from 2 to 3.30 P.M. There will be discussed the question of "Nephritis in its Surgical Aspects." The discussion will open with a paper by Edward L. Keyes, of New York City, followed by a paper by George M. Sternberg, Surgeon-General United States Army, on "The Bacteriology of Nephritis," and by George Chismore, of San Francisco, L. Bolton Bangs, of New York City, and Francis S. Watson, of Boston.

The American Laryngological Association will hold its sixteenth annual congress at Washington, D. C., May 30, 31, and June 1, 1894. The following is the scientific program:

President's Address, by D. Bryson Delavan, of New York. "Nasal Polypus: Its Association with Ethmoiditis, and its Treatment by Resection of the Middle Turbinated Body," by W. E. Casselberry. "Papillary Hypertrophy of the Nasal Mucous Membrane compared with Papillary Fibroma or Papilloma," by Jonathan Wright. "The Use of Metallic Electrodes in the Treatment of Nasal and Post-nasal Disease," by Clarence C. Rice. "Observations on some of the Results of Cutting Operations on the Nasal Septum," by Thomas R. French. "Some Comments on the Surgery of the Antrum of Highmore," by W. H. Daly. "*a*. A Case of Odontoma invading the Antrum of Highmore and corresponding Nasal Fossa, with the Application of an Improved Method of Anesthesia adapted to Operations in the Mouth. *b*. A Case of Foreign Body (gold coin) engaged in the Ventricles of the Larynx," by A. W. de Roaldes. "Foreign Bodies in the Larynx, with Report of a Case," by Charles M. Shields. "Three Cases of Papilloma of the Larynx," by Charles H. Knight. "Report of a Case of Sarcoma and of one of Epithelioma of the Larynx," by Arthur Ames Bliss. "A Case of Laryngectomy by a Novel Method," by H. L. Swain. "Two Cases of Tumor of the Epiglottis," by J. Solis-Cohen. "Singers' Nodes," by F. I. Knight. "*a*. A Case of Cyst of the Larynx. *b*. Pharyngo-mycosis," by C. F. Ingals. "Exudative Pharyngitis," by W. C. Glasgow. "A Case of Sarcoma of the Tonsil," by A. W. Watson. "Importance of an Early Diagnosis of Malignant Tumors of the Throat," by J. W. Gleitsmann. "On Neurasthenic Throat, with Illustrative Cases," by W. P. Porcher. "Contribution to the Study of the Etiology of Rheumatic Affections of the Body due to Tonsillar Diseases," by H. L. Wagner.

On June 1st, at 2 P.M., in the general session of the Congress, a discussion on "The Surgery of the Accessory Sinuses of the Nose" will be conducted under the auspices of the Association by Drs. Bosworth, Bryan, Mackenzie, and Roe.

The American Physiological Society will hold its annual meeting in Washington, on May 29th, 30th, and 31st. The following papers and demonstrations are announced: "The Physiologic and Therapeutic Action of Nuclein," by V. C. Vaughan. "Remarks on the Qualitative Determination of Ptyalinogen and Pexinogen," by J. W. Warren. "Some Points on the Chemistry of Muscle," by G. N. Stewart. "Demonstration of the Effect of Calcium Salts on the Contractility of the Heart," by W. H. Howell. "Circulation Time in Organs," by G. N. Stewart. "A Study of the Volume-Changes in Muscle During Activity and Rest," by G. W. Fitz (introduced by Prof. H. P. Bowditch). "Exhibition of Plethysmographic Curves During Sleep," by W. H. Howell (for Messrs. Bardeen and Nichols). "On the Employment of Cerebral Pressure as a means of Anesthesia," by G. T. Kemp. "On the Pleuro-cardiogram and the Nature of the Cardio-pneumatic Movements," by S. J. Meltzer. Exhibition of a new Canula-coupler (modification of the old French form), by G. T. Kemp. "The Effect of Fatigue on the Rate of Transmission of Nerve-force," by H. P. Bowditch. "Preliminary Note on Cerebral Centers of the Bladder," by Isaac Ott. "Some Facts Bearing on the Action of Strychnin on the Spinal Cord," by A. R. Cushny. "On Respiratory Paths in the Spinal Cord," by W. T. Porter. "Experiments upon Reflex Vaso-constriction and Vaso-dilatation," by W. H. Howell (for Mr. R. Hunt). "Preliminary Report of Experiments on Reflex Time of Winking," by W. P. Lombard (for Mr. D. P. Mayhew). A Short-circuiting Commutator, affording making or breaking induction-shocks, by W. P. Lombard. 1. Hand-rest to be used with Ergograph; 2. Non-oxidizable Mercury Key, by W. P. Lombard (for Mr. Sidney P. Budgett.

Meetings of Philadelphia Medical Societies:

	Meets.	Next meeting.
College of Physicians,	1st Wednesday, Sept.—June.	June 6
Sec. of Ophthalmology,	3d Tuesday, Sept.—May.	May 15
County Medical Society,	2d and 4th Wednesdays, Sept.—June.	May 23
Obstetrical Society,	1st Thursday, Sept.—June.	June 7
Pathological Society,	2d and 4th Thursdays, Sept.—June.	May 24

Meetings of State and National Medical Societies:

	Meets.	Next meeting.
American Academy of Medicine.	Aug. 29, 30	Jefferson, N. H.
American Association of Genito-urinary Surgeons.	May 29–June 1	Washington, D. C.
American Association of Obstetricians & Gynecologists.	Sept. 19–21	Toronto, Ont.
American Dermatological Association.	May 29–June 1	Washington, D. C.
American Electro-therapeutic Association.	Sept. 25–27	New York City.
American Gynecological Society.	May 29–31	Washington, D. C.
American Laryngological Association.	May 30–June 1	Washington, D. C.
American Medical Association.	June 5	San Francisco, Cal.
American Ophthalmological Society.	May 30, 31	Washington, D. C.
American Orthopedic Association.	May 29–June 1	Washington, D. C.
American Otological Society.	May 29	Washington, D. C.
American Pediatric Society,	May 29–June 1	Washington, D. C.
American Physiological Society.	May 29–31	Washington, D. C.
American Surgical Association.	May 29–June 1	Washington, D. C.
Arkansas Medical Society.	May 23	Pine Bluffs, Ark.
Army and Navy Medical Association.	May 17, 18	Decatur, Ill.
Association of American Anatomists.	May 29–June 1	Washington, D. C.
Association of American Medical Colleges.	June 6	San Francisco, Cal.
Association of American Physicians.	May 29–June 1	Washington, D. C.
British Medical Association.	July 31–Aug. 3	Bristol, Eng.
Canadian Medical Association.	Sept. 1	St. John, N. B.
Colorado State Medical Society.	June 19–21	Denver, Col.
Connecticut Medical Society.	May 23, 24	New Haven, Conn.
Illinois State Medical Society	May 15	Decatur, Ill.
Indiana State Medical Society	May 17–18	Indianapolis, Ind.
Iowa State Medical Society.	May 16–18	Des Moines, Ia.
Medical Society of Delaware.	June 12	Lewes, Del.
Medical Society of North Carolina.	May 15–17	Greensboro', N. C.
Medical Society of Pennsylvania.	May 15–18	Philadelphia, Pa.
Medico-Legal Society.	Dec. 12	New York.
Mississippi Valley Medical Association.	Nov. 20–23	Hot Springs, Ark.
Missouri State Medical Association.	May 15–17	Lebanon, Mo.
Ohio State Medical Society.	May 16–18	Zanesville, O.

The American Otological Society will hold its twenty-seventh annual meeting at Washington, D. C., on the 29th of May, in connection with the third triennial Congress of American Physicians and Surgeons. The following papers are announced: "Otitic Brain-abscess; Opening of Mastoid, Tympanum, and Skull; Evacuation of Abscess; Hernia Cerebri; Evacuation of another Abscess; Recovery," by H. Knapp. "Five Deaths following Suppurative Otitis, with Two Autopsies," by F. M. Wilson. "The Conservative Treatment of Mastoid Inflammation," by Ralph W. Seiss. "Remarks on the Treatment of Chronic Purulency of the Ear," by Samuel Sexton. "Chronic Tympanic Vertigo (so-called Ménière's Disease): its Relief by Surgical Liberation of the Stapes," by Charles H. Burnett. "The Value of Middle-ear Operations as a Means of Improving the Utility of the Organ of Hearing," by Edward B. Dench. "Statistical Studies of the Foramen of Rivinus and of the Axis of the External Meatus in their Relations to Intratympanic Surgery," by B. Alex. Randall. "An Insufflator for Applying Powder to the External Auditory Canal," by Walter B. Johnson. "Exhibition of Photographs of the Temporal Bone and Membrana Tympani," by Gorham Bacon.

Prof. J. Arnold, of Lille, an eminent French hygienist, died recently, at the age of sixty-four years, from an attack of infectious pneumonia. He contributed many papers to the literature of medicine and hygiene. His principal works were upon typhus, malaria, and pulmonary tuberculosis. He was one of the callaborators of the *Archives de Médecine*, of the *Gazette médicale de Paris*, and of the *Annales de Hygiène*. He was an ardent advocate of cremation of the dead.

BOOKS AND PAMPHLETS RECEIVED.

Hemogallol in the Anemia of Mal-assimilation. By William Henry Porter, M.D. Reprinted from the American Medico-Surgical Bulletin, 1893.

Transactions of the American Association of Obstetricians and Gynecologists. Vol. VI. For the Year 1893. Philadelphia: Wm. J. Dornan, Printer, 1894.

The Healing of Rodent Cancer by Electricity. By J. Inglis-Parsons, M.D., M.R.C.S., M.R.C.P. Lond. London: John Bale & Sons, 1893.

The Relations of Urinary Conditions to Gynecological Surgery. By Charles P. Noble, M.D. Reprinted from the American Medico-Surgical Bulletin, 1893.

Report of a Year's Work in Minor Gynecological Surgery in the Kensington Hospital for Women, Philadelphia. By Charles P. Noble, M.D. Reprinted from the Transactions of the Philadelphia County Medical Society, 1893.

The Causation of the Diseases of Women. By Charles P. Noble, M.D. Reprinted from the International Medical Magazine, 1893.

Report of Two Years' Work in Abdominal Surgery at the Kensington Hospital for Women, Philadelphia. By Charles P. Noble, M.D. Reprinted from the International Medical Magazine, 1893.

The Successful Management of Inebriety without Secrecy in Therapeutics. By C. H. Hughes, M.D. Reprinted from the Alienist and Neurologist, 1894.

Report of the Kensington Hospital for Women (non-sectarian), from October 10, 1892, to October 9, 1893. Philadelphia. Incorporated June 11, 1887.

Four Years' Work in Diseases of the Rectum at the Post-Graduate Hospital Clinic. By Charles B. Kelsey, M.D. Reprinted from the New York Medical Journal, 1893.

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ORIGINAL ARTICLES.

ACUTE APPENDICITIS.[1]

BY JOHN B. DEAVER, M.D.,
OF PHILADELPHIA.

With Remarks in Opening the Discussion.

BY J. M. DA COSTA, M.D.

HISTORY.

MORE than sixty years ago Albers, of Bonn, first described, under the name of typhlitis, localized inflammations about the cecum, of four varieties:

1. Stercoral typhlitis—stagnation of fecal matter in the cecum, with subsequent irritation.

2. Simple typhlitis—catarrhal inflammation due to a multitude of causes.

3. Perityphlitis—extension of the inflammation of the mucous membrane to the external coat of the cecum and the surrounding parts.

4. Chronic typhlitis.

Previous to 1820 Dupuytren recorded observations calling attention to the connection between abscess of the right iliac fossa and disease of the cecum. In 1827, Husson and Dance described the disease more in detail. In 1824, Louyer and Villermay gave the first description of a fatal peritonitis due to perforation of the appendix. Melier, in 1827, reported four cases, three of which were cases of perforative appendicitis with fulminating peritonitis; the other a case of relapsing appendicitis. He laid especial stress upon two distinct symptoms in the perforative cases, namely, more or less severe abdominal colic and fixed pain localized in the right iliac fossa. Melier not only described the causes, character, and consequences of appendicitis, but foresaw the possible advantages of operation in this affection. He says: "If it were possible to establish with certainty the diagnosis of this affection, we can see the possibility of curing the patient by an operation. We shall, perhaps, some day arrive at this result."

Subsequent memoirs of Ménière and Albers, advancing the notion that the lesions occupied the cellular tissues of the right iliac fossa, caused Melier's theories to be lost sight of. Later memoirs of Bodart, Favre, Forget, and of Leudet, added new facts to those established by Villermay and Melier.

Thus little by little the view that the grave and fatal forms of typhlitis are due to perforation of the appendix gained ground, and that the benign and curable forms are due to an inflammation of the cecum and the cellular tissues which surround it. The theory still counts a few advocates, but fortunately they each year grow fewer and fewer. This much-vexed question has been restored to the status to which Melier had advanced it by the surgeons and physicians of the United States. They have demonstrated by early operation that inflammation of the right iliac fossa is invariably due, primarily, to disease of the appendix vermiformis.

Hancock, in 1848, operated upon one case, and advocated early operation. This met with no encouragement. In 1867, Willard Parker, of New York, first proved that early operation would save 75 per cent. of the cases. Dr. R. F. Noyes, in 1883, reported 100 operations, 90 per cent. of which had been performed in America.

An article in the *American Journal of the Medical Sciences*, by Reginald Fitz, published in 1886, "On Perforative Inflammation of the Vermiform Appendix," marks the epoch of the present status of this much-discussed trouble. Fitz collected 209 cases of typhlitis and perityphlitis, and 257 cases of perforative appendicitis. His conclusions have been summarized by Talamon as follows: "He showed that the symptoms are the same in the latter as in the former class of cases. He studied with care the consequences of perforation. He established the fact that the peritonitis is not always generalized, but that it may be circumscribed under the form of an encysted purulent collection. He gave the characters of the tumor formed by this localized peritonitis, the different modes of the evacuation of the pus, the complications that may supervene if the disease is left to itself. He insisted on the frequency of fecal concretions as a cause of perforation of the appendix. He concludes in favor of early surgical interference."

In a second paper published by Fitz, in 1888, he advanced the radical but sound theory that the diseases described as typhlitis, perityphlitis, paratyphlitis, appendicular peritonitis, and perityphlitic abscess, are all varieties of one and the same affection, namely, appendicitis.

ANATOMY.

The vermiform appendix is a narrow musculomembranous tube ending in a blind extremity, and

[1] Read before the College of Physicians, May 2, 1894.

is the atrophied remnant of the elongated cecum. It is present in man and in some of the higher apes only. The elongated cecum persists in other mammalia. It is attached to the inner and posterior wall of the cecum, the point which originally was its apex.

The appendix may arise from the apex of the cecum, be a direct linear continuation of the colon, and thus afford an example of the fetal type. It may arise from the lower end of the cecum, under which ciscumstances it is unequally divided by the anterior longitudinal band, that portion to the right of the band being larger, while that to the left, though smaller, constitutes the true apex of the cecum. This is the type of cecum usually found when there is an increased development of the anterior wall, which rotates the apex posteriorily and to the left, thus bringing it into close relation with the ileo-cecal junction. Finally, it may arise from the lower end of the cecum, appearing between two bulging sacculi and posterior to the inferior angle of junction of the ileum with the cecum.

In cases of non-descent of the cecum the appendix will hold a corresponding abnormal position, when it may lie to the left of the median line. Lennander mentions the case of a boy of sixteen, in which the cecum and the appendix, which was nine inches long, were found lying against the spleen in the left hypochondriac region.

The length of the appendix varies from one to nine and a half inches, the average being four inches. When the appendix is long, the cecum as a rule is small. Its diameter is that of a goose-quill or about as thick as a large earthworm (Holden). The appendix is hollow and has an opening of communication with the cecum, which is usually guarded by a valve of mucosa.

The left or under layer of the mesentery joins with the serous covering of the appendix, which may be complete or incomplete, forming the mesentery of the appendix or the meso-appendix. In the majority of instances the appendix has a peritoneal covering throughout its entirety. When only a portion of the appendix is included in a peritoneal investment, it is the base or root that is destitute. The root of the appendix being uncovered makes this part of the organ extraperitoneal. If perforation should take place with this disposition of peritoneum, we can clearly see how infection of the postperitoneal connective tissue would occur and result in the formation of an abscess which would be extraperitoneal. Perforation of the appendix between the layers of the meso-appendix would cause infection of the postperitoneal connective tissue.

The meso-appendix is triangular in shape, the base corresponding to the free margin, and the sides to the appendix and the mesentery. It is attached to the proximal one-third or two-thirds of the appendix, leaving the tip free, or it may be attached along its entire length, as I have usually found it. Sometimes it may be altogether absent or exist in so slight a degree as to be practically absent.

It consists of two layers of peritoneum between which run the appendicular artery and vein, and the lymphatics, in addition to some fat. Occasionally the meso-appendix contains a considerable amount of fat which, when operating for its removal, renders it more liable to be torn in the delivery of the appendix. The mobility of the appendix depends upon the extent of the attachment and the width of the meso-appendix.

The meso-appendix may have a hole in it through which the small intestine has been known to herniate and become strangulated. The iliac vessels have been known to pass through the layers of the meso-appendix. In the female it has a prolongation which is lost in the broad ligament; this is described by Clado as the appendiculo-ovarian ligament.

The shape of the appendix varies in accordance with the length of the meso-appendix. When it is short the appendix will present an abrupt curve. If the meso-appendix is shortened in several places it may present a corkscrew shape.

The appendix will occupy one of eight positions in the majority of all cases. Dr. Bristow suggests a very simple method of classification of the positions and directions of the appendix. It consists in locating a central point in the right iliac fossa which represents the attachment of the appendix in its most common position. From this central point are drawn lines radiating in eight different directions. Fowler has modified this method by substituting the initial letters of the points of the compass for the numbers. The central point is located by drawing a line from the anterior superior spine of the ilium to the umbilicus. A point on this line from two to two and one-half inches within the anterior spine will correspond to this central point.

The appendix may occupy either of the ileo-cecal fossæ, more likely the inferior or the sub-cecal fossa. In the event of its occupying the two latter fossæ, it would sometimes constitute a retroperitoneal hernia of the appendix. Again, if it should occupy one of these fossæ and the mouth of the fossa close over it, it might be regarded by the operator as being absent. Suppuration due to inflammation of the appendix so walled in would be circumscribed. Other abnormal positions of the appendix are met with, namely: (*a*) when it lies behind the peritoneum, below the cecum and adherent to its under surface, in contact with its muscular wall, and

covered by the peritoneal coat of the cecum; (*b*) adherent to the peritoneum along the right border of the cecum and ascending colon; or (*c*) adherent to the peritoneum at any point in the neighborhood of the cecum; and (*d*) in the inguinal canal.

When the appendix lies postcecal and postcolic, suppuration, the result of appendicitis, may simulate a lumbar or a perinephric abscess.

The normal positions of the appendix are five:

1. When it lies under the inferior layer of the mesentery directed toward the spleen.

2. When it lies on the ileo-pectineal line or projects into the pelvis. In this position it may become adherent to the bladder. Only in this position is rectal examination of value.

3. When there is a long meso-appendix, it may lie to the right of the cecum and the ascending colon, running upward parallel to the colon over the kidney and toward the right lobe of the liver.

4. When it lies in front of the colon and cecum.

5. When it lies under the cecum.

Usually the width of the meso-appendix accounts for the other three positions by allowing more motion to the organ.

ETIOLOGY.

The theory that appendicitis is due to a foreign body in the appendix—for example, seeds, pits of the smaller fruits, pins, buttons, etc.—has been accepted etiologically in a certain proportion of cases, and fecal concretions for the balance. Recent writers upon this subject have taken exception to this theory, basing their arguments on the fact that cases of appendicitis, with or without perforation, have occurred in which no foreign body could be found. They also present cases in which normal appendices have been found, while performing abdominal section for other conditions, as well as in post-mortem reports, in both of which fecal concretions or inspissated mucus was contained within the appendix without evidences of inflammation, and when there had been no history of symptoms of appendicitis. In every case of appendicitis these observers have demonstrated the presence of the bacterium coli commune in pure cultures or associated with pyogenic organisms. They have grown pure cultures of this bacterium from the walls of an inflamed appendix in which perforation had not occurred, and have also grown pure cultures from the interior of the appendix, and from the pus of an appendicular abscess. This bacterium is normally found within the colon and the appendix; still it has been proved that under favorable conditions—as, for example, inflammation of the appendix—it takes on pathogenic and pyogenic properties. The bacterium coli commune has been grown in pure cultures, or associated with other pyogenic microörganisms, from the exudate of peritonitis, from the pus of a septic pneumonia following a perforative general peritonitis, and also from the spleen and liver of such cases.

From the number of cases in which I have found foreign bodies, it is my judgment that in the majority of cases of perforative appendicitis there is a direct relation between the presence of the concretion and the other causative agents. From the fact that so many cases of appendicitis follow so closely upon the ingestion of improperly masticated and hastily swallowed indigestible food, I cannot help thinking that there is a direct relation of cause and effect between them.

I would classify the causes of appendicitis under two heads—predisposing and exciting.

Predisposing Causes.—*Age.* 15 per cent. of all cases occur under fifteen years of age, but the disease is most common between the ages of ten and thirty. The earliest stage in which I have met with the disease was in a child under two years.

Sex. Males are more prone to the disease than females.

Constipation, from its tendency to provoke catarrhal inflammation.

Tuberculosis, when secondary to the involvement of the cecum. Should the disease be most pronounced in the appendix, it is likely to be followed by a result similar to that of acute perforative appendicitis. The appendix being a rudimentary organ, and therefore of lower vitality than the cecum, is more likely to suffer from pathological processes.

By far the most frequent cause is a *previous attack*, a history of which cannot always be obtained on account of its mild character.

Exposure to cold and wet. I have met with two cases illustrating these agencies. In one the attack was provoked by taking a cold shower-bath after coming out of a warm bath; the other was the result of wet feet.

Traumatism, such as from violent exercise or sudden blows. The former is more likely to cause the disease if it immediately follows the taking of a heavy meal. As I have already stated, the rapid ingestion of indigestible food is an exciting cause.

Exciting Causes.—*The introduction of foreign substances*, such as fecal matter, pits, or enteroliths, when associated with the ever-present bacterium coli commune, is the most frequent exciting cause of appendicitis.

PATHOLOGY.

In considering the pathology of acute appendicitis there is a great difference of opinion as to the cause in localized abscesses of the peculiar offensive odor which the pus possesses; whether this odor is due to a commingling of the gases of the bowel which

are intimately admixed with the pus, or whether it is the result of decomposition of the contents of the abscess. I believe this odor to be entirely fecal, as we find that abscesses occurring elsewhere in connection with the bowel will possess the same characteristic odor which is found in the appendiceal abscess.

Cases which take on the gangrenous type of inflammation may lead to the destruction of the cecum at the base of the appendix. I have seen several such cases during the past year.

Tuberculosis has been found in my experience to be one of the remote causes of suppurative appendicitis.

The rôle which the bacterium coli commune plays in the production of peritonitis lies in the fact that the appendix is a hatching-bed for this dangerous form of bacterium. It can rest within the cavity of the appendix and multiply with perfect impunity, not being in the direct channel of fecal circulation, and irrespective of the fact that intestinal antiseptics may have been administered.

The appendix in an acute inflammatory condition is enlarged, congested, and hard; its peritoneal coat is thickened and at times covered with flakes of lymph. The mucous lining is habitually thickened, not infrequently being almost equal to all of the other coats. Within it presents corrugations, at times irregular ulcerated areas, and in subacute cases may rarely be the seat of small mucous cysts. If perforation has not already taken place there may be seen a dark spot of softening, containing within its tissues colonies of the bacterium coli commune. If perforation has taken place, the tissue surrounding the opening of communication will extrude through it.

In perforation of an appendix in which there is a fecal concretion, the perforation usually takes place at the situation of the concretion. There may be gangrene of the entire walls of the organ, leaving a direct communication with the bowel; or only of the outer coat, leaving the mucous membrane intact. If the appendix be turned upon itself and its inflamed end be in contact with the cecum, ulceration at the spot of contact will occur. I have recently operated upon a case in which such a condition of affairs was present.

On several occasions, while washing out the abscess-cavity I have seen a gangrenous appendix that had ulcerated off appear in the wound.[1]

CLINICAL HISTORY.

Acute appendicitis is usually ushered in suddenly by a severe pain which may be peri-umbilical or epigastric. The character of the pain is paroxysmal and colicky, varying in intensity. Coincident with the pain there is vomiting, first of the contents of the stomach, later of bile-stained material. The colic now subsides, and the pain shifts to the right iliac fossa and becomes constant. There may be a point of greatest intensity, or it may be diffused. The abdominal muscles of the right side are contracted and rigid. There is but little fever. The attack may terminate here with a gradual subsidence of all the symptoms; or on the other hand, this attack may be followed directly by a return of the abdominal pain, and vomiting which is incessant and uncontrollable. The entire belly-wall becomes tense and rigid, though the more so on the right side. The patient takes on the typical and anxious expression of the Hippocratic face, and symptoms of collapse appear, with sweating, and cold and blue extremities, death finally supervening from diffused septic peritonitis.

In another type, the pain, which at first has been diffused, concentrates itself in the right iliac fossa. The accompanying rigidity of the muscles of the right side is replaced by a swelling which in some instances presents to the touch a doughy sensation, and in others that of a hard mass the contour of which is not constant.

The fever, which up to this time has been of a moderate degree becomes pronounced, with a decided rise in the evening and remission in the morning. While this symptom usually indicates pus, absence of a rise of temperature does not necessarily preclude the possibilities of the presence of pus. This I have demonstrated many times by operation to the skeptical attending physician, who has pinned his faith to the thermometer, which instrument is of but little value in the majority of this class of cases.

SYMPTOMS.

Pain. The initial symptom is pain. This usually follows the ingestion of a hearty meal of indigestible foods, improperly masticated and hastily swallowed, particularly when eaten at night. The character of the pain at the outset is paroxysmal and colicky. So far it simulates an attack of acute intestinal indigestion. The term appendicular colic has been applied to this initiatory pain. To this, however, objection has been raised, as the cause of the pain is inflammatory and not functional. While acknowledging the cause of the pain to be inflammatory, yet I am convinced that it may be paroxysmal in character; otherwise how can we explain the wave-like exacerbations so vividly described by an intelligent patient. Palpation over the affected area excites and intensifies this peculiar, wave-like, characteristic pain. Fowler, who in a recent article upon appendicitis has taken exception to the term

[1] Microscopic and bacteriologic examinations are being made by Drs. Stengel, Abbott, and Kneass, and will be published at a later date.

appendicular colic, offers as an argument the absence of poor development of the circular muscular fibers of the appendix, and from this argues the inability of the appendix to cause this colicky pain by expulsive efforts. I must take exception to Fowler's statement, particularly regarding the absence of circular muscular fibers in the appendix, as this organ possesses a continuous circular muscular coat. I will, however, grant that the circular muscular fibers are not always as well developed as the longitudinal, but I am convinced that the appendix possesses sufficient contractile power to cause a colicky pain by its expulsive efforts. The study of pathological appendices cannot be relied on for histological facts. The dissection of normal appendices proves the presence of circular muscular fibers. The irritation arising from a simple catarrhal inflammation of an appendix in which there is no fecal concretion or foreign body, is capable of giving rise to expulsive efforts which cause the colicky pain and which may be likened to similar efforts of an inflamed rectum or bladder.

Location of pain. The primary pain is referred most frequently to the umbilicus or peri-umbilical region; next in order of frequency to the epigastrium; and last of all to the region of the appendix. After the occurrence of localized peritonitis in the right iliac fossa the pain is here located. I have observed two cases in which the pain was referred to the left iliac fossa, in neither of which, as demonstrated by operation, did the appendix occupy the corresponding position. In one the appendix hung down into the pelvis and in the other it was retrocecal.

Rigidity of the abdominal walls. This, next to pain, is one of the most reliable signs. It is usually confined to the right side of the abdomen, being most marked over the inflamed region, and immediately follows the localization of pain in this locality. In some instances the rigidity is so pronounced that it operates against deep palpation, and in addition makes the percussion-note of higher pitch.

Vomiting. Coincident with the onset of the initial pain there is vomiting of the contents of the stomach. This usually does not persist in favorable cases, while in unfavorable cases it is persistent and uncontrollable. The ejecta consist first of the contents of the stomach, later of bile, and finally, if intestinal paresis supervene, consequent upon a septic peritonitis, of stercoraceous matter. When the material rejected becomes stercoraceous, it is thrown off by regurgitation, indicative of a fatal termination.

Constipation. Constipation is present in the majority of cases of appendicitis, yet in a few diarrhea ushers in the attack. Obstinate constipation early in the disease is due either to intestinal paresis, the result of infection, or to the indiscriminate use of opium.

The temperature and the pulse-rate bear no direct relation to the gravity of the attack. We may have early perforation and gangrene of the appendix with but a moderate rise of temperature; on the other hand, there may be a decided rise with a simple catarrhal inflammation of the appendix. The pulse in the former class of cases more nearly corresponds to the gravity of the attack. A sudden fall of temperature to the normal or below normal is not by any means ground for a favorable outlook, as too often it indicates the lull which immediately precedes the storm of destruction, in the shape of perforation or a ruptured abscess. This is in accord with the statement that I have already made, namely, that the thermometer is a most untrustworthy instrument in determining the severity of a case.

Tenderness is one of the most valuable and constant of all the signs or symptoms. It is always present, although if the appendix be postcecal and the rigidity of the abdominal walls marked, it is difficult to elicit, requiring deep palpation. Sometimes it can be elicited through the rectum or vagina. In vaginal or rectal palpation in the female, the possibility of a right-sided pyosalpinx and salpingitis must be borne in mind. In rare cases the tender spot may be located in the loin, only to be discovered by deep palpation. After the advent of suppuration the tenderness becomes general in the right iliac fossa and loses its extreme severity. Frequently after the remission which follows the sudden sharp primary attack, tenderness and rigidity alone remain to tell the attending physician that trouble still exists in the right iliac fossa. The point of greatest intensity is usually over the inflamed appendix, but to this rule there are exceptions. I have recently met with a case in a young adult male, in which the point of greatest tenderness was to the left of the left rectus muscle, a little above the level of the anterior superior spine of the ilium. By rectal examination a small but very sensitive mass occupying the recto-vesical space was detected. The operation demonstrated the appendix occupying this position. The point of greatest intensity usually corresponds to the so-called McBurney's point.

I recall two cases in which the point of greatest tenderness was immediately above the middle of Poupart's ligament. This, as demonstrated by the operation, corresponded to the angle of curve in the appendix; in both cases the origin was from the postero-external aspect of the base of the cecum, descending in front of the latter as far as the apex, where it curved abruptly upward.

Distention may be due to several causes: to mechanical obstruction, to paralysis of the intes-

tines, to septic causes, to obstinate constipation, and consequent collection of gas. Richardson points out the possible differential diagnosis by means of auscultation between distention due to accumulated gas from mechanical causes, and that to paralysis of the intestines the result of infection—the sounds of peristaltic action being clearly heard in the former condition but not in the latter. The distention may sometimes be limited to the right side of the abdomen; here only those portions of the gut in relation with the inflamed area are affected. This local distention may be marked, because the still functionally active intestine will force more gas into the affected portion. If the peritonitis become diffused, the abdomen is flat and its walls rigid and hard. This appears early and arises from the complete paralysis of the intestinal canal preventing the entrance of gas. A distended abdomen associated with marked and uncontrollable vomiting is an ominous combination of symptoms.

Tongue. The tongue is furred, and if diffused peritonitis occur may become dry, associated with a deposit of sordes upon the teeth.

Urine and bladder. The urine is usually diminished in amount, and contains albumin and indican. Several theories have been advanced to explain this diminished and albuminous urine. The most tenable of these is that there is a decreased activity of the glomerules of the kidney, due to the general fall in the arterial tension. Frequency of urination is often a prominent symptom from the first, being most probably due to disturbance of the sympathetic nerves, and when the inflamed appendix occupies the pelvis, to irritation of the bladder directly communicated thereto. In peritonitis involving the serous coat of the bladder, retention of urine may occur, necessitating the use of the catheter.

Respiration. Respiration plays a comparatively unimportant part in the symptomatology of appendicitis, yet I have noticed early in the attack a voluntary limitation in breathing, the patient thus favoring the tender side. If the distention is pronounced the respiration is correspondingly labored, while if there is active peritonitis the respiration is thoracic. In advanced cases of appendicitis with a diffuse peritonitis, a symptom that I have also noticed is a peculiar reflex condition of the pharynx, which the patient speaks of as a difficulty in swallowing.

Leukocytosis. According to Richardson, leukocytosis is an invariable symptom in perforative appendicitis. In one case he deferred operation for twenty-four hours on account of the absence of this symptom, the patient dying a few hours after the draining of an extensive general infective peritonitis.

DIAGNOSIS.

Ordinarily, I regard the diagnosis of appendicitis as simple. The suddenness of the attack; the pain referred either to the peri-umbilical region or right iliac fossa; the occurrence of nausea and vomiting coincident with the pain; and tenderness over the site of the appendix, are pathognomonic. One of the greatest sources of error is the masking of the symptoms by the use of large doses of opium in some form.

The ushering in of an acute attack of appendicitis simulates very closely that of an attack of bilious colic, the pain being peri-umbilical or epigastric, and associated with vomiting. Shortly the pain becomes localized and more intense in the iliac fossa, when we should at once suspect more serious trouble. Owing to the fact that appendicitis follows some hours after the ingestion of food, the vomited matter consists of partly digested material, and is often bile-stained. The pain and tenderness cause the patient to voluntarily assume the dorsal decubitus with thoracic respiration, to favor the affected side. Palpation reveals decided rigidity of the abdominal walls, most marked on the right side, and particularly over the right iliac fossa. While it may be slight, yet the experienced sense of touch cannot fail to recognize it. Tenderness is a most important and reliable diagnostic sign. It is always present, and corresponds to the point of greatest intensity of the inflammation, which is the appendix. This may correspond to McBurney's point, or when the appendix holds an anomalous position its location will be governed by that of the organ—as, for example, when the appendix occupies the pelvis. The point of greatest tenderness is elicited by rectal palpation. Between the disease and the extent and intensity of the tenderness there is a close relationship. When the tenderness continues to increase it shows the progressive tendency of the attack; while if it decrease without the administration of opium, it is indicative of a favorable termination of the attack. I have recently operated upon a case in which the greatest tenderness was elicited by rectal examination, and where there was also a distinct point of tenderness to the outer side of the left rectus muscle; this was explained by the presence of adhesions, indicative of Nature's effort to circumscribe the purulent collection.

Fulness. Fulness in the right iliac fossa appears late, after inflammatory exudate and adhesions are formed; coupled with this a doughy feeling may be present, indicating the presence of pus, though this is not a reliable diagnostic sign. Accompanying fulness there may be edema of the abdominal walls. Excessive circumscribed tenderness I have come to regard as a more reliable sign of the presence of pus than either doughiness or edema.

When the appendix lies over the psoas magnus or iliacus muscles, flexion of the thigh may be an early sign. Another cause for flexion of the thigh upon the abdomen is rigidity of the anterior abdominal wall due to peritonitis, this, however, being a later manifestation.

Distention. In simple appendicitis the distention, if at all present and not due to mechanical causes, is confined to the seat of the inflammation. Distention occurring in connection with appendicitis is due to peritonitis, and its extent corresponds to the area of inflamed peritoneum. Mechanical obstruction due to constipation, or the use of opium causes distention, which differs from that of septic peritonitis in being functional, and can be differentiated by auscultation. Functional distention simply occasions discomfort, while that of septic paralysis is indicative of a grave type of the disease. Distention may also be due to acute mechanical intestinal obstruction, such as bands. In some early cases of perforative appendicitis in which the general peritoneal cavity is not yet walled off, and septic peritonitis supervenes, we may not only not have distention, but instead may have a scaphoid or retracted belly, due to profound paresis of the intestinal canal, which would prevent the admission of gas.

Only in cases of appendicitis with circumscribed peritonitis are we likely to detect the presence of a mass. Even under these circumstances rigidity of the overlying abdominal walls may mask this sign, unless it occupy the pelvis, when it can be detected by rectal or vaginal examination. If the patient be a female, right-sided pyosalpinx or salpingitis must be excluded. Rectal examination should be confined to the use of the finger. The introduction of the hand, I maintain, is unjustifiable, as it endangers adhesions and the rupturing of abscesses. Examination under ether will not throw sufficient additional light on the diagnosis of an obscure case to warrant the administration of the anesthetic.

The advent of suppuration may or may not be accompanied by a chill.

The temperature in appendicitis is so variable and inconstant that it is of little value except in the differential diagnosis between it and some other conditions in which it is characteristic.

Percussion over the diseased area will give a flat or resonant note depending upon the appendix.

In a doubtful case in which it would seem to be impossible to differentiate, rather than introduce an exploring or aspirating needle, either of which procedures under these circumstances I regard as most unsurgical and attended by no little danger, I would advise an exploratory incision.

Differential diagnosis. Appendicitis may be confounded with the following conditions:

1 *Bilious colic or acute indigestion.* The onset of the attack of appendicitis is somewhat similar to that of an attack of acute indigestion, differing, however, in the character of the vomited matter, and in the fact that the pain soon becomes located in the right iliac fossa, and is accompanied by tenderness.

2. *Hepatic colic.* In hepatic colic the painful area is usually higher in the abdomen, referred also to the shoulder, and most severe over the region of the gall-bladder, and usually followed by jaundice.

3. *Floating kidney.* From floating kidney with a twisted pedicle, appendicitis may be diagnosticated by the presence of blood in the urine, a history of a movable tumor prior to the attack, a depression in the right loin corresponding to the site of the kidney, and possible symptoms of uremia.

4. *Intestinal obstruction.* In intestinal obstruction the onset is more abrupt, and the pain, which at first was remissive, is referred to the seat of the obstruction, more commonly to the umbilicus; there is absolute constipation and inability to pass flatus, and vomiting occurs early and soon becomes fecal. With the onset of peritonitis regurgitant vomiting occurs, and there is absence of fever unless the patient survives long enough to allow inflammation to set in. Invagination is the most common form of obstruction in children, while obstruction from bands and volvulus are more common in adult life. Tumors from these forms of obstruction are more common to the left of the linea alba. When obstruction is the result of invagination, blood and mucus will be discharged from the rectum, and upon examination through this avenue a tumor may be felt. The early development of peritonitis in acute intestinal obstruction is marked by great distention of the abdomen. Shock and collapse appear early in obstruction, but not in appendicitis, unless it may be of the fulminating type, and even then collapse does not occur as early.

5. *Pyonephrosis.* From abscess of the kidney appendicitis differs, first, in that the pain in the former radiates to the groin and testicle with retraction of this latter organ. Tenderness is elicited on pressure over the kidney. There is irritability of the bladder and diminished excretion of urine, which contains pus and possibly some blood. In the absence of urinary symptoms, abscess of the kidney, and particularly if it be a floating kidney, is necessarily more difficult to differentiate. In the latter instance, however, the tumor will be movable. I have recently operated on a case of acute suppuration of the kidney in which the urine was normal, and the diagnosis was made on the anatomic situation of the swelling. Nausea, sometimes with vomiting, is not an inconstant symptom.

6. *Perinephric abscess.* When the appendix holds a retrocecal position and an abscess forms, it may

be mistaken for a perinephric abscess, but the absence of intestinal disturbance will be sufficient to clear the diagnosis.

7. *Nephritic colic.* To differentiate between nephritic colic and appendicitis is at times difficult, owing to the fact that in the latter condition there is in rare and exceptional cases pain referred to the umbilicus, retraction of the testicle, associated rectal and vesical tenesmus, and painful micturition. This error, however, could only occur in the early stages of appendicitis, as the symptoms of the later stages are so entirely dissimilar. I recall the case of a physician, in which the diagnosis of renal colic had been made, and in which the ureter was supposed to have been ruptured by the passage of a calculus. The autopsy revealed a gangrenous and perforated appendix with diffuse suppurative peritonitis.

8. *Hepatic and perihepatic abscess.* Appendicitis can only be confounded with abscess of the liver or about the liver when, late in the disease, a circumscribed collection of pus is in close relation with this organ, and when the appendix is postcecal and points toward the liver. The previous history, the hectic temperature of hepatic or perihepatic abscess, and the pain referred to the shoulder will be sufficient to establish the diagnosis.

9. *Entero-colitis.* In this disease the colicky pain is more marked, and there is present a mucous diarrhea and extreme collapse.

10. *Neuralgia of the right iliac fossa.* Neuralgia of the right iliac fossa is a condition associated with localized intermittent pain, which is relieved rather than increased by deep pressure. A case has been reported by Shrady of a medical man whose appendix was removed under these circumstances.

11. *Extra-uterine pregnancy.* From extra-uterine pregnancy the diagnosis is made by a history of pregnancy; and along with the rupture of the sac and production of a pelvic hematocele, there is profound collapse followed by a discharge of blood and decidual shreds.

12. *Typhoid fever.* From typhoid fever appendicitis can be differentiated by the frequency of the pulse, the absence of the characteristic temperature, the coated tongue with red border, epistaxis and headache. The presence of spots does not necessarily indicate typhoid fever, as spots may be present in septic conditions.

13. *Hip-joint disease.* The presence of the characteristic deformity, inability to execute the normal movements of the joint, pain referred to the knee, arching of the lumbar spine when the limb is brought into the fully extended position, and absence of intestinal symptoms, should settle the diagnosis.

14. *Abscess of the abdominal wall.* Between abscess of the abdominal wall and that caused by appendicitis, there should be but little difficulty in arriving at a correct conclusion. If the collection is in the superficial fascia it will be circumscribed, while if between the abdominal muscles it is likely to be diffused. The purely local character of the abdominal abscess, the swelling moving with the abdominal walls, the absence of intestinal symptoms, the presence of local and constitutional evidences of pus, coupled with the history of the case, should be enough to render a differential diagnosis possible.

(To be concluded.)

SUICIDES.

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In the performance of my duties as Police Surgeon during the past fourteen months I have treated forty-six cases of suicide and attempted suicide. They were very nearly equally divided as to sex: twenty-four were females, and twenty-two males.

The cause of the attempt was ascertained in thirty-seven cases. Ten were on account of lovers' quarrels. The greater part of these were among the class known as "kept women." Only one was a public prostitute. Eight were due to poor health, combined in five instances with poverty. Three were well-marked cases of melancholia. Two wanted to die because they could not quit drinking. Four were on account of trouble between man and wife. Seven were out of work and out of money. One had no money to defend himself against a charge of larceny, of which he claimed to be innocent. One was a mother who had just heard of the death of her child in Kansas, and had no money to enable her to go to its funeral; and one man, who knew himself to be impotent, married a young lady, and tried to do away with himself after several months of wedded misery. At least three-fourths of the cases were partly under the influence of liquor at the time of making the effort at self-destruction.

In twenty-eight cases opium or some of its derivatives was taken. Three took strychnin. One took "Rough on Rats," which is composed principally of crude arsenic. One took half an ounce of fluid extract of cactus grandiflorus; one took an ounce of carbolic acid; one drank several ounces of a saturated solution of chloral hydrate; and one tied a bottle of chloroform around her neck in such a way that the open mouth of the bottle was in contact with her nostrils. One took two ounces of "bromidia," and one disappointed young man chewed up a seltzer glass and swallowed it. Three attempted to suffocate themselves with illuminating gas. One of these claimed to have blown out the

gas accidentally, but the surroundings and circumstances all indicated that it was intentional.

Another, a boy of sixteen, buckled a strap around his neck so tightly that he was comatose when discovered. This boy, who was an epileptic, had made a previous attempt in the same unique manner, had also jumped head first into a well, and thrown himself in front of a moving train, without injury each time. One severed his radial artery with a sharp-pointed harnessmaker's knife. One tried to shoot himself, and one was lying on the floor dead when found, having probably taken hydrocyanic acid. In addition to this one, five of the cases ended fatally.

Three of the fatal cases were due to opium, one to strychnin, and one to chloral hydrate. One of the fatal opium-cases, an old man, recovered from the direct effects of fifty grains of morphin, but died ten days later from inanition and exhaustion as an indirect result of the attempt.

The case classed as death from strychnin should, perhaps, be classed as a death from an unknown cause. This man had repeatedly threatened to kill himself. He was suddenly taken sick, and I was sent for, and found him with well-marked symptoms of strychnin-poisoning. A stomach-tube was inserted, and his stomach well washed out. He recovered in a few hours, and said he had gone to a drug-store, called for ten cents worth of morphin, and taken it. He had presented no symptoms of opium-poisoning. A few days later he was taken sick with symptoms of gastritis, from the effects of which he died in about two weeks from the time I was first called to see him. I have never arrived at a satisfactory conclusion in regard to this man's death. The onset of the gastritis was not sudden enough to indicate that he had again attempted suicide by taking an irritant poison, unless it was taken in small and repeated doses, which would be very unusual for a suicide.

I have related this case at length to call attention to the fact that the gastritis might possibly have been caused by undue violence in the passage of the stomach-tube, and to emphasize the fact that too much care cannot be used in the passage of this instrument. The stomach-tube was used in twenty-three of these cases, and in no other instance could any bad effects be referred to it. I have used the lever stomach-pump, manufactured by Tiemann & Co., with a lisle-thread-tube. The ordinary soft-rubber-tube, with a funnel at the top, is almost useless for the treatment of suicides. I have on two occasions passed the tube down the trachea instead of the esophagus, but the mistake was discovered before any damage was done by simply placing the finger over the end of the tube, when the current of air accompanying respiration could easily be felt. This is a precaution which should always be taken before fluid is introduced. I know of a case in this city in which a man who had taken morphin with suicidal intent was actually drowned by this unfortunate method of pulmonary irrigation.

In the twenty-eight opium-cases reported the preparations taken were as follows: Morphin, 20; tincture of opium, 5; powdered opium, 1; aqueous extract of opium, 1; and one smoked opium, taking a large dose of morphin soon afterward. The smallest doses taken were half an ounce of the tincture of opium in one case, and three and one half grains of morphin in another. The largest dose was the entire contents of a dram-bottle of morphin. This quantity was taken in several cases. In all of the cases the drug was taken by the mouth.

I shall confine my remarks on treatment entirely to cases of opium-poisoning, as these are seen to be by far the most common. The symptoms are practically the same, no difference being observed, whatever the preparation of opium taken. Morphin in solution and the tincture of opium act more quickly than the solid forms, such as morphin pills and powdered opium.

The first stage of opium-poisoning is one of increased nervous excitability. I think that the small percentage of successful suicides by this agent is due largely to this condition. The patient becomes talkative and excitable, and if he engages in conversation with anyone he almost always betrays the fact that he has taken poison, thus allowing early treatment to be instituted. When a large dose is taken, this stage may be very short. Its duration is from ten or fifteen minutes to three or four hours. The second, or the stage of somnolence, is ushered in by a feeling of drowsiness, and the patient goes into a condition very closely resembling sound sleep. This soon gives way to the third, or stage of narcosis. The patient is now entirely insensible to pain, the pupils are small, the face has a purplish hue, the respiration is slow and snoring, but usually not stertorous. The pulse is either strong and nearly normal, or rapid and weak. The skin is relaxed and moist, but the perspiration is rarely profuse. I am aware that these symptoms do not agree in some respects with those given by the authorities on toxicology, but I have given them as noticed in my own cases. As to the differential diagnosis, the contracted pupils, exceedingly slow respiration, and cyanotic face, are usually sufficient to establish a diagnosis.

The case mentioned in which chloral hydrate was taken puzzled me greatly. When I was called the patient, a woman of thirty-five, was lying asleep. I aroused her, and she muttered a few words, turned over, and went to sleep again. The pupils were normal or slightly dilated, the pulse about normal, but rather weak, and respiration normal. I ex-

pressed the opinion that she was only drunk, as her breath had a distinct odor of alcohol. I was told that she had been drinking, but she had told her friends that she was tired of life, and was going to "take a dose." I gave her a hypodermatic injection of apomorphin, and, to my surprise, it failed to act. After waiting about ten minutes I tried to arouse her, but failed. The pulse became weaker and rapid, the respirations more shallow, and she died within half an hour of the time I was called.

Repeated injections of strychnin and digitalis had no effect either on the pulse or on the respiration. The countenance was natural, and the rhythm of the respiration was uninterrupted and noiseless to the last. I did not make a diagnosis until after death, when I found a bottle of a strong solution of chloral hydrate from which several ounces had been taken. The temperature of the patient was not taken.

A curious fact which has been noted by both my colleague, Dr. Wheeler, and myself in opium-poisoning is that several fatal cases have, after being unconscious for a long time, opened their eyes, moved their hands, and shown other signs of returning consciousness, dying almost immediately afterward. The patients have been pulseless and in a dying condition when this phenomenon occurred.

The first step in treatment is, of course, to empty the stomach. If the patient is still conscious or can be aroused, I depend on apomorphin hydrochlorate for this. I give one-fifth of a grain hypodermatically. This drug deteriorates if kept too long, and should be replaced by a new supply occasionally. As soon as the apomorphin has been given I have the patient drink as much water as he can be prevailed upon to take. Free emesis occurs in from one to ten minutes. I believe that any patient seen early enough to induce vomiting in this manner by apomorphin will recover. In fact, most of them require no further treatment, unless it be simply to keep them awake if they show a tendency to go to sleep. The dangerous cases—those that require energetic treatment—are so profoundly influenced by the narcotic that the cerebral centers fail to respond to the irritation of the apomorphin.

If the case is too far advanced for apomorphin to be of service, I proceed to pass the stomach-tube, attach it to the pump, and inject about a quart of hot water. I leave this in for a few minutes, to allow it to dissolve whatever solids there may be in the stomach, and then withdraw it by reversing the pump. This is repeated several times, or until the water removed from the stomach is clear. In the meantime I have had prepared a quantity of hot, strong coffee. I now inject one or two quarts of this into the stomach. This procedure is almost invariably followed by an improvement in the respiration and a lessening of the cyanosis. The coffee acts as a physiologic antidote to the opium, although I believe the heat which is conveyed from the distended stomach to the solar plexus and diaphragm, and perhaps to the heart itself, to be more beneficial than any direct action of the coffee. I have used hot water when coffee could not be obtained, and the difference in the result was not appreciable.

I have often used coffee so hot that I could not bear my hand in it in this manner without bad after-effect, and consider it one of the most efficient remedies at our command for stimulating the heart and respiratory organs in these cases. The coffee is pumped out as often as it becomes somewhat cooled, and replaced with hot coffee. I wish to lay stress on the importance of having the stomach fully distended with the hot fluid, as I think this to be an essential point.

It must be admitted, however, that this procedure is not without danger. If a gastric ulcer should be encountered it might result in serious hemorrhage, or even rupture of the stomach. I have supplemented this method in a few cases by rectal injections of coffee. I have found it difficult to induce the rectum to retain enough to distend the transverse colon, where it seems to me it would be of the most benefit. This difficulty might be obviated by injecting the fluid more slowly than I did or by using a rectal tube.

The galvanic current I have not had an opportunity of using, as a portable galvanic battery is not easily obtained. I hope at some future time to be able to make a report of cases treated with the aid of the chlorid-of-silver galvanic battery now on the market, which is easily carried to the bedside. I have used a strong Faradic battery for two purposes: First, for stimulating the respiratory muscles. To do this I place the positive pole between the shoulders, and move the negative pole from side to side along the anterior attachment of the diaphragm. I have failed to perceive much benefit from its use in this manner.

The principal use I make of the current is in keeping the patient awake. I leave the positive pole as before, and touch the negative pole to the patient's lips, nose, ears, or eyelids as often as necessary. I have been able to keep patients awake in this manner when walking and slapping had failed. I regard the time-honored custom of walking and abusing a patient until he is exhausted as entirely unnecessary, and believe that it actually lessens the chances of recovery. It has seemed to me that if a healthy person who had taken no opium was put through the same treatment that these unfortunates are often compelled to undergo he would die of exhaustion. Much less, then, could a person whose vitality is already lowered by the action of a powerful narcotic

be expected to withstand the added depression following the severe treatment so often persisted in.

The endeavor should be to save the strength of the patient, not to exhaust it. I always put the patient to bed, cover him up, put dry clothing on him if, as is usually the case, cold water has been thrown on him, and depend on the battery to keep him awake as described. In the absence of a battery, pulling the nose is nearly as efficient as walking the patient, and does not exhaust him.

As for drugs, I rely largely on strychnin sulphate. I give a twenty-fifth of a grain hypodermatically, and in extreme cases repeat this dose every ten or fifteen minutes, until there is twitching of the muscles or the breathing becomes spasmodic in character. Even after it is pushed to this extent the effects wear off rapidly, and it needs to be frequently repeated. I am convinced that I have saved several cases which would have died had not this drug been used. I usually give $\frac{1}{100}$ of a grain of atropin, and repeat it twice at intervals of fifteen or twenty minutes. I think the importance of this remedy has been over-estimated. It certainly dilates the pupils, and theoretically it counteracts the systemic effects of opium, but I have failed to notice any decided beneficial effects from its use.

I have at times used digitalis, and I believe it to be of some benefit when the heart's action is weak. It has the disadvantage, however, of being slow in its action, even when given subcutaneously. I therefore depend largely on the more transient heart-stimulants, whose action begins more promptly. In a few cases I have given hypodermatics of aromatic spirit of ammonia. This is a very good diffusible stimulant, but has the objection of frequently causing an abscess at the point of injection.

When the patient has not been under the influence of liquor prior to taking the opium I sometimes give whiskey or brandy subcutaneously with good results. If the unconsciousness is long continued the catheter should be passed to prevent the possibility of reabsorption of the poison from the urine. I have frequently heard "morphin fiends" make the assertion that an overdose of opium would be counteracted by cocain. Acting on the suggestion I gave a man in the last stage of narcosis a quarter of a grain of cocain hydrochlorate every ten minutes until I had given him three doses. His pulse became very weak and rapid, and he died in a few minutes after the last injection. I have made no further experiments with cocain. In another case to which I was called a physician who had preceded me by an hour and a quarter had treated the case solely by the subcutaneous injection of the tincture of iodin—for what purpose I cannot conceive. The man died soon after my arrival.

I believe the responsibility for a large percentage of the suicides in this city rests with the newspapers. A suicide written up in a sensational manner, accompanied, perhaps, by a picture of the deceased, is usually followed by a number of attempts by others within a short time. There are at all times in every city a number of poorly balanced individuals who need only the suggestion conveyed to them in this manner to determine them to make an effort to end their existence.

CLINICAL LECTURE.

EXTRA-ARTICULAR ABSCESS NEAR THE HIP—COMPOUND FRACTURE OF THE LEG; SIMPLE FRACTURE OF THE THIGH—PARAPLEGIA DUE TO POTT'S DISEASE.

A Clinical Lecture delivered at the Buffalo General Hospital.

BY ROSWELL PARK, A.M., M.D.,
OF BUFFALO, N. Y.;
PROFESSOR OF SURGERY IN THE UNIVERSITY OF BUFFALO.

EXTRA-ARTICULAR ABSCESS NEAR THE HIP.

THIS patient is a boy, four years of age, whose trouble dates back two weeks, when his mother took him out for a short walk on a chilly night. During the walk he was taken with nose-bleed and vomiting, and he appeared to be thoroughly chilled. After reaching home fever succeeded the chill, and within a short time there developed pain, swelling, and other symptoms of inflammation about the left hip. Ever since then the child has been peevish, complaining in a general way of pain, and with evident tenderness about the hip. Dr. Bernard Bartow has seen the patient, and I will ask him to give you the further history of the case.

DR. BARTOW: All I recall as bearing upon the diagnosis and indications for treatment are the acuteness of the trouble to which Dr. Park has referred; the fact that the child was previously well, except for an attack of whooping-cough, and the evidences of trouble in or about the hip-joint, as shown by pain on motion, the malposition of the limb, and later the swelling of the hip. The child was treated at first by a physician who made a diagnosis of rheumatism. Later, as the symptoms did not abate, another physician was called, who applied a blister and made the diagnosis of hip-joint disease. The acute development of the trouble excludes the ordinary chronic form of tuberculous hip-joint disease. Owing to the pain which digital examination caused, I have not decided as to the exact nature of the swelling.

DR. PARK: Such a history suggests several diseases to be differentiated from one another; inflammation somewhere in the bone, the shaft of the femur, head, epiphysis, or about the acetabulum; an acute synovitis taking on the purulent form; or an extra-articular inflammation with abscess-formation. These are among the more probable explanations of the trouble. If there were inflammation of bone coming on suddenly in this location, there would be not merely an ostitis, but an

osteomyelitis. The symptoms have not approached the severity of those of acute osteomyelitis. The child will allow himself to be lifted, and, after pacifying him, I could move the hip and jar the thigh-bone without causing complaint. The slightest attempt at such manipulation in acute osteomyelitis would have caused intense agony. I think we must conclude that if there is anything of the nature of ostitis it is localized and slight. The movement of the joint, to which the child submitted, makes it improbable that a synovitis exists, although we may imagine that at this stage the tenderness has passed away. But what has principally attracted both Dr. Bartow's attention and my own is the swelling and pain at the outer and posterior aspect of the joint under the gluteus maximus. For the sake of a more careful examination the child has been chloroformed in spite of the persistence of the whooping-cough, as I believe that the condition about the hip is a sufficiently urgent demand for exploration, and, if need be, surgical interference. It seems to me that, beneath the thick gluteal covering, I find fluctuation. Further exploration should be made, and we will disinfect this region preparatory to incision. The red marks which you see on the buttocks are due to an early scald, and have no significance for our present purposes. With reference to the etiology of the abscess—if there be an abscess—it must be due to the entrance of bacteria, and it is interesting to note that the child has recently had several little abrasions of the toes. Even slight injuries of the feet are sometimes followed by the conveyance of micro-organisms to the groin and neighboring parts by the lymphatics, followed by the development of abscesses.

Not because I am afraid of the result of an incision, but because in ordinary private practice, in which most of you will engage, caution is necessary, I will illustrate to you the preliminary use of the exploring-needle and syringe to make sure of the presence of pus. A little thick pus is withdrawn, confirming our diagnosis. Now, on making a free opening with the knife, I find quite a large abscess-cavity deep down beneath the muscles of the buttocks. Notice that I have followed the general rule applying to all operations in this region, to make the incision as far as possible from the anus. It is necessary to make a counter-opening to provide for free drainage, and this I do on a level with and a little to the outside of the tuberosity of the ischium. While I come down to periosteum, I do not find bare bone indicating bone-disease, nor is the capsule of the joint distended, as it would be if there were an effusion in the synovial sac. The pain, fever, and general symptoms which the child has manifested can be accounted for by this extra-articular collection of pus. The cavity is disinfected as thoroughly as possible with the hydrogen dioxid spray, which causes a frothing and bubbling at both orifices. A tent of zinc oxid-gauze is inserted, and over the wounds will be applied a simple antiseptic dressing.

FRACTURE OF TIBIA, FIBULA, AND FEMUR.

This patient is a boy, ten years old, who, three and a half months ago, was knocked down by a horse, and sustained a compound fracture of both bones of the leg and a simple fracture of the upper portion of the femur. His condition was so serious on account of the extensive laceration of the soft parts and the shock that we were prevented from doing what we wished to do. Traction could not be applied to the lower fragment of the femur on account of the condition of the leg. By dint of a good deal of effort—for the boy was hard to control—the fractured bones of the leg were held in place and have united. There remains a little ulceration marking the site of the laceration of the soft parts. The fracture of the femur has resulted in some angular deformity nearly as high as the trochanter, and there is a somewhat unsightly projection at this point. The operation to day is to relieve this deformity. Whether there is simply a projection to be chiselled off, or whether it will seem best to make a Macewen osteotomy, break the bone, straighten it, and apply traction, I cannot determine at present. The leg will now allow the application of a traction-apparatus. Examining the parts under complete anesthesia, I find that there is an excessive deposit of callus all around the bone at the site of the fracture. It is not, however, an exostosis in the proper sense of the word. Under these circumstances, if nothing were done to remedy the deformity, Nature would probably try to relieve the interference with muscular movements by developing an adventitious bursa, a "cyst of new formation," to enable the muscles to slide over the projection. I see no indication for rebreaking the bone, as the contour of the limb will be sufficiently restored if I cut down and remove some of the excess of callus with the chisel. At a later date it may be expedient to hasten the healing of the ulcer on the leg by skin-grafting.

[The removal of the callus was done as indicated and the wound dressed aseptically.]

PARAPLEGIA FROM POTT'S DISEASE.

This case illustrates the results of pressure upon the spinal cord, due, not to injury, but to the insidious progress of disease. The patient is a little girl, aged eight, whose mother has brought her to the hospital to seek relief. Sensation is not entirely gone, for the child feels when I tickle the sole of the foot. So far as any volitional effort is concerned, she makes none, so far as I can discover, to raise the leg, though there is a slight reflex from the irritation of the foot. Holding her upright, she cannot aid in the least in maintaining her position. Even as she sits on the table she supports herself with her hands. She complains of pain, particularly at night. The explanation of these symptoms is found on inspecting her back. There is a marked gibbosity of the dorsal spine, technically called a kyphosis. It is not quite regular, and it does not straighten out when I lift her by the shoulders. The intermittent pain, felt especially at night, is an almost constant feature of such a disease. Without calling the child's attention to the movement, I press down on her head. Rather to my surprise she makes no complaint of pain. If the disease were in the cervical region the slightest pressure on the head would certainly cause pain. From the rigidity of the spinal muscles, from the care with which the child protects herself from every jar, there is no difficulty in determining that properly directed pressure would cause pain. The diagnosis is Pott's disease of the spine, or tuberculous spondylitis. Now, what relation has this disease of the bones to the paralysis? Simply

the relation of cause to effect. The spinal canal has a very slight backward curvature in the dorsal region, but when it is kinked by the giving way of carious vertebræ its lumen is closed very much as a rubber tube would be collapsed by bending. The paraplegia is simply the compression-paralysis of Pott's disease.

What can be done for its relief? Drugs will do little except to promote better nutrition and to regulate excretion. The muscles of the legs and the lower part of the body are idle, and they will atrophy unless they are permitted or made to work. We can cause them to contract and to receive proper nutrition by electricity and massage. To permit them to perform their natural function at the will of the patient we must straighten out the kink in the spinal canal, or, at least, prevent its becoming worse, and thus allow the spinal cord to adapt itself to its new surroundings. This I can effect by putting on a plaster-of-Paris jacket, with a jury-mast to keep the weight of the head off the dorsal vertebræ. The possibility of operation must be considered. On purely theoretic grounds it would be comparatively easy to cut down on the site of the compression and remove the pressure. Practically, the operation would not be of great difficulty to the surgeon, but it would be a very serious danger to an emaciated, cachectic patient like this. There is not only the shock of the operation, but the drain on the vitality, of a slow recovery, and the liability to septic infection. Moreover, the success of the operation is not certain. If there be nerve-degeneration, there is less to be hoped for from the relief of pressure. It is difficult to say whether the degeneration of nerve-tissue has yet occurred. If the compression of the spinal cord had occurred rapidly, even with this degree of paralysis, there would not be the same reason to fear serious degeneration. I have not, however, absolutely given up the idea of operating, but I shall first try the conservative plan, which we should prefer in the case of our own children.

PATHOLOGIC NOTE.

DUPLICATION OF THE SPINAL CORD, AS A RESULT OF POST-MORTEM INJURY.

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RECENT studies of the artefacts of the nervous system by Van Gieson, some of the results of which were presented at a meeting of the New York Neurological Society in June, 1892, and subsequently embodied in a series of articles in the *New York Medical Journal*, place in an entirely different light many of the heretofore recorded cases of congenital abnormality of the spinal cord. Van Gieson, after an exhaustive review of the cases of malformation of the cord reported prior to 1892, together with an experimental study of the subject, including the examination of a large number of cords unwittingly injured during removal, and others in which it was attempted by intentional bruising and rough treatment to reproduce some of the appearances previously regarded as of ante-mortem origin, reaches the conclusion that of the thirty-one cases of supposedly congenital malformation recorded from 1878 to 1892, only six are instances of true developmental defect; the remaining twenty-five, including cases of heterotopia of the gray and white substances, and several instances of most remarkable doubling of the cord, reported by Fürstner, Zacher, Drummond, Schiefferdecker, Feist, Kronthal, and others, being nothing more than topographic alterations in the nervous tissues produced by bruises and other injuries inflicted during unskilled or careless removal of the cord from its bony canal, or by rough handling after its extraction.

When it is considered that the literature of these pseudo-malformations had attained to quite respectable proportions, and that the misconception of their true nature, passing unchallenged for many years, had already given rise to erroneous conclusions as to the frequency of spinal-cord malformations in general, and of their influence in the causation of disease, the value of Van Gieson's work may be appreciated.

The case which is made the subject of this paper offers an apt illustration of the facility with which the most bizarre and misleading appearances may be produced by unintentional injury of the cord during post-mortem examination; and but for Van Gieson's rational explanation of the real character of the apparent anomalies noted, it would in all probability have been added to the twenty-five instances of spurious "congenital malformation" already recorded.

The patient was an epileptic imbecile girl, subject to convulsions from early childhood, small, and misshapen; the cranium, face, and body were asymmetric, the right side the smaller; there was a slight lateral curvature of the vertebral column, with marked displacement of the spines of the eleventh and twelfth dorsal vertebræ. The convulsive movements usually began and were more severe upon the right (the smaller) side. The tendon-reflexes were exaggerated, the more markedly so upon the right side; a distinct ankle-clonus existed on this side. The gait was shambling and unsteady, but not characteristic. The patient was irritable, possessed a limited vocabulary and very slight intelligence. She died in her twenty-sixth year, of tuberculosis of the lungs.

The autopsy, held five hours after death, showed extensive and extreme sclerosis of the first and second temporal convolutions and of the cornu ammonis of the left hemisphere; the *right* lateral lobe of the cerebellum was smaller than the left, and its posterior portion shrunken and sclerosed. The discovery of these lesions led to a more than ordinarily careful removal of the spinal cord, this being accomplished without appreciable injury to the organ, save at the point of displacement of the eleventh and twelfth vertebræ, where some difficulty was experienced in getting through the laminæ, and a diagonal gash in the dura and enclosed cord was inflicted by the chisel. After the cord, enclosed in its membranes, was taken out, it was observed that at the dorso-lumbar junction the cord seemed remarkably small, and this fact was noted in the written report of the autopsy. This abnormally contracted portion extended from the point of injury upward for about one and one-fourth inches; the small cord could be distinctly felt through the relaxed dura; at the upper extremity of the contracted segment the cord became unduly large, and the dura seeming tensely distended by its contents; this swelling gradually diminished above, and within a distance of

one and one-half inches the cord had regained its natural size. It was conjectured that this abnormality might in some way be associated with the deformity of the spinal column and the symptoms of a spinal lesion noted during life. The tissue, seeming soft, the cord was placed in Müller's fluid for hardening without further examination or handling, a few transverse cuts being previously made through cord and dura, but leaving untouched the seat of the supposed malformation. The process of hardening was completed in alcohol, and the cord then subjected to careful inspection before dividing it into convenient bits for section-cutting.

Transverse cuts through the dura and the cord at the point of greatest apparent hypertrophy showed the seemingly normal and uninjured dorsal cord crowded to one side, and the entire space between the cord and the dura filled by a crescent-shaped mass of material, softer and paler than the cord, with a somewhat mottled surface. The cord and the outlying mass were apparently enveloped in the same unbroken arachno-pial sheath. Sections above and below this point discovered the extraneous crescent to thin away—gradually above, abruptly below, where it terminated in the small contracted portion previously mentioned. A cross cut through this contracted area disclosed the appearance of a cord shrunken to one-third its normal size, and destitute of gray matter; below, at the point where the cord resumed its normal dimensions, the wound made by the chisel, with some bruising and extrusion of the nervous tissue, was noted; over the remainder of the contracted part, as at the swelling above, the arachno-pial covering seemed uninjured. A transverse section at the junction of the swollen segment with the seemingly atrophic segment showed a considerable distortion of the gray horns of the cord and some pale splotches in the white tissue; several similar but smaller whitish patches were noted in the columns of Goll in the upper portion of the cervical enlargement. Throughout the remainder of its length the cord seemed to the naked eye to be of normal character, excepting for the disintegration observed at the point of injury in the upper lumbar region, previously referred to.

Microscopic examination of a section prepared from tissue taken from the abnormally enlarged segment resulted in the unexpected discovery that the extraneous crescent was composed of nervous tissue, gray and white, the gray arranged so as to present a rude imitation of the normal disposition of the gray matter of the spinal cord, the white showing irregular bundles of nerve-fibers interspersed between masses of apparently unorganized myelinic material; in brief, an instance of partial duplication of the spinal cord had been discovered. Some regret was felt that a cord exhibiting so interesting and unusual an anomaly should have been injured just at the seat of the malformation, and a detailed study of the organ was undertaken. The cord was cut into half-inch pieces and sections made representing practically the entire length of the cord; at the swollen and contracted parts special care was exercised, and sections in series to the number of many hundreds were made and examined.

Beginning above, the first abnormality discovered was in the upper portion of the cervical enlargement, where, in the columns of Goll, the irregular pale spots had been noted; these the microscope showed to be due to an apparently anomalous course of some of the bundles of nerve-fibers; the fibers, instead of running longitudinally and showing their cut ends only in a cross-section of the cord, pursued a more or less horizontal course, and were traceable for considerable distances across the sections; some fibers pursued a peculiar gyral or corkscrew like course; some ran in straight bundles, the fibers lying parallel; some exhibited an extremely irregular arrangement. The abnormality was entirely confined to the columns of Goll, and to the left anterior pyramidal tract (Fig. 1). From this point to the beginning of the abnormal swelling in the lower dorsal region no lesions or abnormalities meriting notice were detected. The sections then bring into view the first evidence of the outlying crescent of nerve-tissue in two separate masses of nerve-material, composed in part of bundles of medullated nerve-fibers, in part of apparently unformed myelinic material, staining deeply by the Weigert hematoxylin method. A little lower down these two masses become united, and two small patches of gray substance make their appearance. A short distance below this point the gray and white masses assume somewhat the appearance of a much-distorted anterior half of a spinal cord, which likeness becomes more pronounced when the point of greatest apparent hypertrophy is reached (Fig. 2). Here the supernumerary cord is well shown, although there is much distortion of the gray horns and many abnormalities of arrangement in the white tissue. The gray horns are larger than the gray horns of that portion of the dorsal cord around which the heterogeneous tissue has disposed itself, and the surface-area of

Fig. 1.

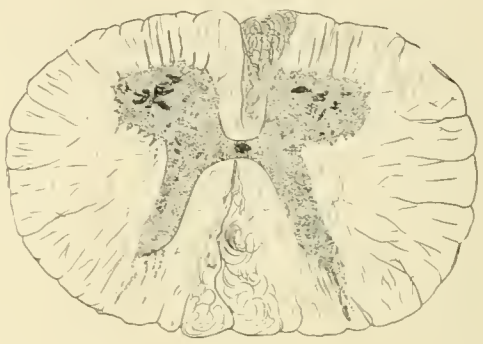


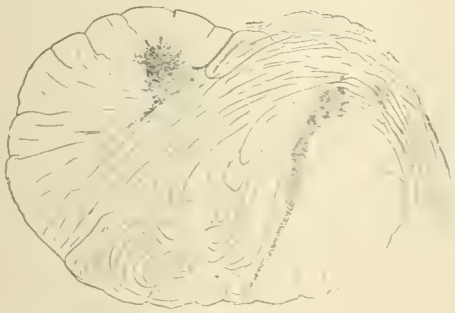
Fig. 2.

a transverse section of the accessory cord is somewhat greater than that of the dorsal cord. Below (Fig. 2) the abnormal crescent diminishes rapidly in thickness, and the cord shows the first indications of intrinsic malformation; the posterior gray horns become unduly ap-

FIG. 3.

proximated, and some distortion of the white substance, notably in the posterior columns and on each side of the anterior median fissure, appears (Fig. 3). Immediately below this point the distortion of the gray and white substances of the cord becomes extreme; large bundles of fibers run diagonally across the section, pass through the ruptured pia, and apparently become continuous with the extraneous crescent above (Fig. 4). The cord then

FIG. 4.



becomes contracted, and a transverse section shows an appearance but little resembling a spinal cord; there is simply a mass of irregularly disposed white fibers and myelinic material contained in a collapsed and shrunken arachno-pia; at the lower extremity of this shrunken part the wound inflicted by the chisel in the dura, pia, and cord is situated, and some of the cord-substance is extruded through the gash; from a point immediately below the wound to the extremity of the cord no lesion is discovered.

The features of noteworthy interest, in addition to the topographic changes illustrated in the diagrams and in the foregoing description are these: The extraneous crescent is continuous below with the mass of nerve-tissue passing out of the cord, shown in Fig. 4; and here the pia is ruptured; the extruded material and the entire mass of the outlying crescent throughout its length occupies the "sub-arachnoid space"; the arachnoid is nowhere broken, save at the point of chisel-injury, some distance below this. The heterogeneous crescent gives origin to no nerve-roots, and no bloodvessels can be traced into it.

Many hours were spent in an attempt to solve the problem of the development of this accessory cord in its peculiar situation, and of the abnormal contraction and absence of gray matter in the cord immediately below this. In looking up the literature of the subject, reference to partial doublings, somewhat resembling this case, was found in one or two of the text-books and in the writings of several German authors. The results of injury in the upper lumbar region were recognized, but it was not deemed possible that so remarkable a duplication of the cord could be produced by injury of any kind or degree. Being, however, unable to arrive at any intelligible solution of the puzzle, the whole matter was put aside until recently, when, through the courtesy of Dr. Welch, of the Johns Hopkins University, to whom a section of the cord was submitted, Van Gieson's monograph was brought to notice.

In the light of Van Gieson's researches the case is made plain. The entire abnormality is a *bruise artefact*.

The spinal cord is of especially difficult access at the dorso-lumbar junction, and it is in exactly this locality that most of the reported duplications of the cord have been situated. In the case in hand the displacement of the vertebræ made the severance of their laminæ a matter of peculiar difficulty; the chisel employed in effecting this by some mishap cut through the dura and into the pia-arachnoid and the cord itself. The spinal dura is a tough and by no means easily lacerated membrane, so that a cut through it with a chisel not particularly sharp, presupposes the application of considerable force; in this instance the cord was probably severely bruised and a powerful squeeze applied to it before the dura gave way. This violence was sufficient to detach a fragment of cord-tissue, and, rupturing the pia, forced the loosened segment upward into the sub-arachnoid space, Fig. 4 representing the point of exit. The distortions and topographic anomalies in the cord, illustrated in Fig. 3, are doubtless results of the same violence which caused the invagination. The lesser abnormalities, shown in Fig. 1, are due to an appreciated small bruise at this point (upper portion of the cervical enlargement). The invaginated crescent, of course, shows much disintegration of its structural elements and alterations in the relations of its gray and white substances; it is torn loose from its nerve-roots and nutrient vessels. The abundant formless myelinic material mentioned as taking a deep Weigert stain is derived from the crushed and broken myelin-sheaths of the white nerve-fibers. The cord, apparently shrunken to one-third its normal size, is the column of white substance remaining after the separation and upward invagination of the portion which goes to form the distorted crescent.

During the past several years probably twenty-five or more spinal cords have been removed in our autopsy-room in about the same manner as the one under consideration, and sections from them studied with greater or less care. In no one of these cases, however, has any appearance at all resembling those above sketched been discovered. Several of the cords have been injured in removal, but the results of injury have always been

easily recognizable as such; and the case immediately under consideration is the only one in which any such deceptive duplication has been unearthed.

It is a matter of some practical importance to workers in the pathology of the nervous system that the fact be recognized that, however rarely, such remarkable doublings as the one here reported do occur as a result of unintentional violence to the cord, and perchance when least expected.

CONGENITAL ABSENCE OF THE GALL-BLADDER.[1]

By AUGUSTUS A. ESHNER, M.D.,
ADJUNCT PROFESSOR OF CLINICAL MEDICINE IN THE PHILADELPHIA POLYCLINIC.

The subject from which were obtained the specimens to be presented had been under the care of my friend Dr. C. F. Pettibone, upon whose invitation I undertook the post-mortem examination, and by whose courtesy and with whose coöperation this report is made. The case occurred in a rachitic, colored child, two years old, that had never walked unsupported and had presented no symptoms suggestive of any anatomic peculiarity referable either to the biliary apparatus or to other structures. The child had just gotten its first tooth; its ribs were beaded; its chest flattened laterally; the top of its head but slightly convex and its forehead square. It had not yet been taken from its mother's breast and had presented no noteworthy derangement of the digestive apparatus. The child was the outcome of the first pregnancy of the mother, and no family history of syphilis was obtained, although the previous wife of the father had had two miscarriages. The little patient came under observation on account of a slight but rather persistent cough, with occasional dyspnea at night. The bowels were moved several times daily and the stools were pale. There was no jaundice. Upon physical examination no impairment of the pulmonary percussion-resonance was detected, but numerous fine râles were heard posteriorly and at the bases of the lungs. The heart appeared somewhat displaced downward and to the right, but the action was rhythmic and the sounds clear.

The child was lost to observation for a short time and nothing was heard of it until information came that it had died and a certificate of death was asked for. Upon post-mortem examination the epicardium was found to be injected and the pericardial cavity to contain an excess of clear fluid. The heart was large and distended with blood. Its cavities were dilated, but the valves and orifices presented no abnormality. Both lungs were involved in an extensive, widely distributed broncho-pneumonia, with, in places, some compensatory emphysema. The angulation and hyperplasia at the junction of the true ribs with their cartilages was particularly marked upon the inner surface. The kidneys presented a striking pallor of the medullary pyramids. A small supernumerary spleen was present. The bronchial and mesenteric glands were enlarged. The ileum was free from ulceration. The liver appeared of normal size and condition. It presented a whitish nodule at its anterior margin, histologic examination of sections from which shows the remains of hepatic parenchyma, in part in a state of fatty degeneration, together with hyperplasia of connective tissue, accumulations of round cells, and in places homogeneous loss of structure—changes that I take to be of syphilitic origin. The sections that I exhibit show the presence of the hepatic, portal, and biliary vessels. No gall-bladder could, however, be found, either attached to or detached from the liver, or even contained within the structure of this organ, and, as I show you, the usual fissure for the gall-bladder is wanting and there is nothing suggestive of the previous presence of this viscus. Unfortunately the relations of the hepatic artery, the portal vein, and the hepatic ducts were not attentively observed *in situ*. The usual papilla was found in the duodenum, marking the point of entrance of the choledoch and pancreatic ducts, and from this point a duct could be traced upward for a short distance, but the ducts issuing from the liver could not be isolated. The portal vein is perfectly evident and displays no abnormality. There is every reason to believe that the blood-supply of the liver was normal and that the functional activity of the organ was in no way interfered with. The case thus clearly resolves itself into one of agenesis of the gall-bladder.

That absence of the gall-bladder is not incompatible with life is demonstrated not only by cases of this kind, in which there is a congenital deficiency of that viscus, and by the cases in which it is wanting as a result of pathologic causes post-natal or as a result of surgical interference, but also by the further fact that it is normally wanting in some animals, as, for instance, the elephant, the rhinoceros, the camel, the goat, the deer, some species of fish, some birds, and some rodents.[1] Its *congenital* absence in man seems, however, to be a rare condition. In a partial survey of the literature of the subject I have been able to find but few cases of the kind. The number becomes swelled if cases be included in which the gall-bladder was absent obviously or probably as the result of obliterative processes of one kind or another. I append in chronologic sequence a brief summary of the cases that I have gathered. There are a few others to which I have not had access.

Huber[2] reports having found an absence of the gall-bladder in the dead body of a woman sixty years old. The place of the viscus seemed to be supplied by a preternaturally large hepatic duct, which opened into the duodenum in the usual situation, and the coats of which were greatly thickened, and whose lining membrane presented a villous appearance, with numerous small spots believed to be follicles. The biliary ducts were likewise enlarged.

Cholmeley[3] records the case of an infant that was noticed to be sallow at birth and soon afterward became intensely icteric. The stools were white and pasty. Death took place at the age of five weeks, being pre-

[1] Read before the Philadelphia Pathological Society, April 12, 1894.

[1] The gall-bladder may be viewed as but an elaboration of structure dependent upon some differentiation of function, representing, as it were, but a diverticulum of the union of the biliary ducts of the liver.

[2] The Philosophical Transactions of the Royal Society of London, vol. ix, from 1744 to 1749, p. 649. London, 1809.

[3] Medical Transactions of the College of Physicians of London, 1820, vol. vi, p. 50.

ceded by convulsions. Upon post-mortem examination the usual depression in the liver for the gall-bladder was found present, but the viscus itself was replaced by a narrow, impervious cord. The pancreas was enlarged and indurated. It is stated that the transmission of bile into the duodenum was prevented by pressure of the pancreas on the common duct. Cholmeley cites from Morgagni an instance in which the gall-bladder was wanting, but in which two livers were present.

Gaultier[1] has reported the case of a man, aged sixty, with jaundice, who died of tuberculosis, and in whom no trace of a gall-bladder could be found. The duodenum, however, was adherent to the liver by means of fibrous bands. In the bowel opposite the point of entrance of the choledoch duct a large biliary calculus was found. This duct passed directly into the liver without presenting any diverticulum corresponding to a cystic duct.

Baker[2] found the gall-bladder wanting in a subject that came into the dissecting-room. A puckered appearance of the liver in the usual situation of the gall-bladder suggested the destruction of this viscus by some suppurative process.

Bergmann[3] has reported the case of a woman who had long been insane, and in whom after death the left lung was found replaced by two insignificant fleshy masses, the liver enlarged, and the gall-bladder replaced by a small fibrous mass. From the liver a membranous canal passed to the duodenum.

Bergmann cites a case recorded by L'Emery[4] of absence of the gall-bladder, the bile passing from the liver to the duodenum through numerous small ducts.

Canton[5] has reported the case of a woman, sixty-five years old, dead of some "disease of the brain," and in whom the gall-bladder was wanting, although a shallow groove for its accommodation was present in the usual situation. The liver was reduced in size. The right and left hepatic ducts were of usual size and diameter, uniting at an angle below the transverse fissure of the liver to form a common choledoch duct of unusual length and caliber, and whose lining membrane presented the characters of the mucous wall of the gall-bladder.

Canton refers also to a case, reported by E. Wilson, of a fetus born at term that lived but a few hours, and presented a number of peculiarities, the most noteworthy of which was an absence of the gall-bladder. Reference is also made to two specimens in the Museum of the Royal College of Surgeons, in one of which the gall-bladder and the hepatic duct are absent, and in the other of which the gall-bladder was replaced by fibrous tissue.

Thomas[6] has reported the case of an infant five months old that had presented jaundice from the second or third day of life. The child was able to suckle, but vomited a little daily. The bowels were irregular; the stools were white or clay-colored. A week before death anasarca and ascites developed. Upon post-mortem examination not even the rudiments of gall-bladder or cystic or hepatic ducts could be found. The liver weighed fourteen ounces; microscopically its cells were found filled with yellow, granular matter, without much fat. The mesenteric glands were enlarged. Two glands in the longitudinal fissure were softened.

Trimble[1] reports the case of a woman, fifty-five years old, who for several months had presented epigastric pain, nausea, occasional vomiting, furred tongue, pyrosis, anorexia, constipation, emaciation, and ascites. After death there were found inflammatory adhesions about the pancreatic and choledoch ducts. The liver was reduced in size, and in one situation attached to the pancreas. Here it was of cartilaginous hardness, and on section was found to contain a gall-stone imbedded in the common choledoch duct. Careful examination failed to disclose the presence of even a vestige of the gall-bladder.

In 1860 Simpson,[2] before the Edinburgh Obstetrical Society, reported the case of a child four weeks old presenting a condition with features both of erysipelas and scleroderma. In the sixth week vomiting suddenly set in, and was soon followed by death. Upon post-mortem examination there were found present evidences of peritonitis. The gall-bladder could not be found, and there was no depression corresponding to its usual site. The common choledoch duct opened into the duodenum in its usual situation. The duct could be traced backward to the transverse fissure, where it broke up into the hepatic ducts.

In 1865 Sands,[3] before the New York Pathological Society, reported finding in the dissecting-room, in a tuberculous male subject about twenty years old, a liver without a gall-bladder and without a fissure for its lodgment. The liver was small, weighing one and three-fourths pounds, and its quadrate lobe was wanting.

Lynche[4] has recorded the case of an infant, eleven months old, in which icterus made its appearance a few days after birth, the stools presenting a dead-white appearance. Later on the child manifested a tendency to hemorrhage. After death the liver was found to be large, weighing one pound and two ounces. The hepatic ducts were small, but there was no trace of a gall-bladder, its place appeared to be taken by an enlarged cystic duct.

Rambault and Schachmann[5] have reported the case of a paretic dement who after death presented, in addition to the classic lesions of paretic dementia, a small liver with absence of the gall-bladder, the fossa for this viscus being replaced by a shallow fissure. There was no indication of a cystic duct. The hepatic ducts presented no abnormality. During life there had been no symptoms suggestive of the absence of the gall-bladder.

It will be seen, even on superficial analysis of the cases collated, that in most of them the absence of the gall-bladder was associated with conditions that point to obliteration of a previously existing viscus, rather than to a condition of agenesis, such as I conceive to have been present in the case now reported.

[1] Journal de Médecine hebdomadaire, July 11, 1829, tome iv, No. 41, p. 61.

[2] North American Archives of Medicine and Surgical Science. February, 1835. vol. i, No. 5, p 307.

[3] Hannover'sche Annalen für die gesammte Heilkunde, 1836, B. i, p. 553.

[4] Mém. de l'Acad. des Sci., 1701.

[5] Lancet, 1847, vol. ii, p. 406.

[6] Medical Times, July, 1848, vol. xvii, No. 458, p. 171.

[1] New Jersey Medical Reports and Transactions, 1850, vol. iii, p. 303.

[2] Edinburgh Medical Journal, 1861, vol. vi, part ii, p. 1045.

[3] New York Medical Journal, June, 1865, vol. i, p. 222.

[4] Medical Press and Circular, 1875, n. s., xx, p. 362.

[5] Bulletin de la Société Anatom. de Paris, 1882, lvii ann., 4e sér., tome vii, p. 499.

MEDICAL PROGRESS.

The Symptomatology of Syringomyelia.—SCHLESINGER (*Neurolog. Centralbl.*, 1893; *Centralbl. f. Nervenheilk. u. Psychiatrie*, March, 1894, p. 151) directs attention to several symptoms of syringomyelia to which little attention has heretofore been paid. Among these are certain paralyses of the ocular apparatus, such as are observed in the course of posterior spinal sclerosis, and are frequently but transitory. There may also be laryngeal palsies, assuming a prominent place in the manifestations of bulbar involvement, usually insidious in development and chronic in course. These laryngeal disturbances are usually motor; paresthesiæ are uncommon; diminution of the laryngeal reflex irritability is sometimes present, and sometimes the sense of pain and the thermal sense are diminished. The motor derangement consists more frequently in interference with phonation than in disturbances of respiration. Unilateral recurrent palsy is commonest; less common is unilateral posticus palsy. The pressure-sense sometimes undergoes a peculiar change, the appreciation of pressure upon the cutaneous surface being greatly impaired or entirely abolished, while no defect is observed if the pressure-sense is tested in the ordinary way.

The Function of the Muscular Coat of the Bladder in Normal Micturition.—In an experimental research, GENOUVILLE (*Archives de Physologie Normale et Pathologique*, 5e sér., t., vi, No. 2, p. 322) found that the vesical orifice of the bladder is normally opened by contraction of the unstriated muscular tunic, and that the contraction of this muscle is necessary to the expulsion of the urine. The contraction of the abdominal muscles may aid this action, but is not indispensable, and cannot replace it. Although volition seems to be directly concerned in the act of micturition, it acts rather by causing, through a psychic act, reflex contraction of the muscular coat of the bladder. Ordinarily, the contraction of the muscular coat is the result of a reflex having its point of departure in a special sensibility of the bladder to tension, the two properties of the bladder, contractility and sensibility, being intimately related, and being manifested in perfect accord in the physiologic activity of the viscus.

Glycosuria of Nasal Origin.—At the recent International Medical Congress BAYER (*Wiener medizin. Presse*, 1894, No. 15, p. 576), reported a case of occlusion of the nares, attended with various trophic disorders and with glycosuria, in which the symptoms disappeared after the removal of the nasal obstruction. It is explained that in cases of this kind the occurrence of the glycosuria is to be ascribed to the diminished oxidation and the circulatory disturbance resulting from interference with respiration and to a reflex effect upon the medulla oblongata.

THERAPEUTIC NOTES.

Applications of Guaiacol in the Treatment of Orchitis.—At a recent meeting of the Société Médicale des Hôpitaux BALZER and LACOUR (*La Méd. Moderne*, 1894, No. 28, p. 444) reported favorable results from applications of guaiacol in the treatment of orchitis. The application was soon followed by relief of pain and subsidence of the general syptoms, including fever, so that repose and sleep became possible. In the inguinal region pure guaiacol was used, but upon the scrotum an ointment containing from 2 to 5 parts of guaiacol to 30 of vaselin was applied. The applications gave rise to some burning pain, but all distress disappeared in the course of a few hours. The pain was sometimes permanently relieved after the first application, but as a rule two were required daily. As soon as the pain had ceased the applications were withheld, as they did not appear to exert any resolving influence upon the inflammatory exudate. The applications often induced a slight erythema of the scrotum, followed by desquamation and sometimes by fissures. It is suggested that the good effects are brought about principally by a reflex influence upon the terminations of the cutaneous nerves. It is admitted that cutaneous and pulmonary absorption plays a certain part, but the rapidity of the action indicates a local effect.

Potassium Bichromate in the Treatment of Various Gastric Affections.—FRASER (*Lancet*, No. 3685, p. 922) reports the successful employment of potassium bichromate in eighteen cases of various forms of dyspepsia unassociated with evidence of gastric ulcer, and in ten other cases in which distinctive symptoms of ulcer had been present at some previous time. The drug was administered in pill or in solution and on an empty stomach in doses of from one-sixth to one-twelfth of a grain twice or thrice daily, the smaller dose being, as a rule, found sufficient. The remedy showed itself capable of relieving and, often in a short time, of removing the entire group of symptoms (excepting anemia and constipation) encountered in dyspepsia, and especially pain, nausea, vomiting, and gastric tenderness. The drug also displayed anti-putrefactive properties. The effects in acute gastric ulceration with hematemesis were not favorable.

Ammonium Sulphichthyolate in the Treatment of Pulmonary Tuberculosis.—After an experience with more than one hundred cases of pulmonary tuberculosis during a period of longer than two years, COHN (*Deutsche medicin. Wochenschrift*, 1894, No. 14, p. 330) recommends the administration of ammonium sulphichthyolate, mixed with an equal part of water, in doses of from four to forty drops thrice daily. The drug is best given in a generous quantity of water before meals, and the dose is increased gradually one drop of the mixture daily. It may also, though not with the same advantage, be given in pill-form or by inhalation.

Quinin for Enuresis.—POTTS (*Therapeutic Gazette*, vol. xviii, No. 4, p. 217) has observed that in cases of chorea treated with full doses of quinin a coexisting enuresis was also corrected as long as the active administration of the drug was continued. It is suggested that the efficiency of the remedy depends in the case of enuresis, as in that of chorea, upon a stimulating influence exerted upon the inhibitory apparatus of the spinal cord. While the result is a speedy one, it is not a maintained one, and additional tonic measures are required to render the relief permanent.

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SATURDAY, MAY 19, 1894.

TWO WRONGS DO NOT MAKE ONE RIGHT.

THE confusion of mind with which the questions relating to revision of the Code of Ethics of the American Medical Association were approached by the estimable members of the majority of the Committee on Revision is well illustrated by a letter from a justly and highly honored member of that committee, DR. LEARTUS CONNOR, of Detroit, published in the *Journal of the American Medical Association* of May 5th.

In that communication it is apparently assumed that criticism directed against the report of the majority of the committee has been directed against the personal character and motives of the members; and in the arguments brought to sustain the work of the revisers and to defend it against critics, the personality of the critics is similarly made a subject of comment.

No good result can be thus reached. The question is one of principles, not of persons. We have never doubted the probity of the revisers or their honesty of purpose, and we shall continue to honor them as they deserve as men and as physicians, although we must reject them as guides upon questions of general medical ethics. Their character is good, but their work is abominably bad; and it is their bad work, not their good character, that we are discussing and that we urge the members of the American Medical Association to "vote down."

On the other hand, the facts that one of those who oppose the report of the majority of the committee is a professor of medicine, and that another is an authority upon genito-urinary diseases, and a third is the author of a medical book, have likewise nothing whatever to do with the questions under discussion. If these gentlemen have, in teaching or writing to the best of their ability, done anything at variance with the written Code, or with the stricter unwritten code that guides honorable physicians, let them be held to strict account for such action; but let us not be led astray from the matter really before us through the obtrusion of irrelevant issues.

To consider now, stripped of all personal allusion, the argument made for the proposed revision, there will be little difficulty in exposing its weakness.

It is said that in "no single one" of the criticisms of the proposed revision "is a single reason given to support the belief that the adoption of the committee's report would fail to benefit the profession."

This statement evinces a singular blindness. THE MEDICAL NEWS has given *three* cogent reasons out of many possible ones why the adoption of the report would fail to benefit the profession:

1. Because it is an unconditional surrender to quacks and pathists.

2. Because it is an unconditional surrender to nostrum-venders and certificate-mongers.

3. Because it is an unconditional surrender to advertisers and commercial specialists.

It is further said that the proposed revision differs from the present Code "mainly by giving greater liberty of action to the individual physician—only this and nothing more." Of course. What more is wanted? It gives liberty to do what is now prohibited. If it did not, no one would urge its adoption and no one would oppose it.

The object of a code is to impose restraints—or, rather, to state what restraints right-minded men impose upon themselves. If we object to restraint we must abolish the Code *in toto;* that would give still greater "liberty of action to the individual." But if we have a code and its concomitant restraints, that code must not give "liberty" to any action of *questionable propriety*.

THE MEDICAL NEWS would vastly prefer "No Code" to the mutilated Code of the majority of the committee. Those "who study the law that they

may do everything not punishable" might then alter their outward conduct for the worse; but those who refrain from doing evil because it is evil, and not from fear of written statutes, would continue to avoid doing the things the committee seeks to legalize.

But let us see what reason is given for the proposed abolition of restraints: "The committee believed that with the changes incident to the last forty years, especially the better general and technical education prevailing both among profession and people, it would be wise to provide for an increase of the personal liberty accorded to the individual physician."

To this we would reply by a query: How many years does it take for a wrong to "change incidentally" into a right? By the nomination of forty years, does the committee mean to imply that there is a definite rate *per annum*, say two and one-half *per cent.*, at which dishonor becomes honorable and mendacity truthful? The Decalogue was proclaimed several thousand and forty years ago. At what annual rate should the restraints which that Code places upon "individual liberty of action" be removed? Surely the committee does not need to be told that the difference between right and wrong is not a question of years! Neither is it a question of education, whether "general" or "technical." We confess we do not clearly understand the contention as to education. Are well-educated men exempted from the restraints of the present Code? Or were there no well-educated physicians in America forty years ago? Or was it the lack of education "among the people" that rendered a code necessary then that is (partially) unnecessary now? We have always been simple enough to believe that increased education brought increased and not diminished responsibilities; that one might pardon in the ignorant what he would condemn in the instructed. Perhaps, however, this, too, has incidentally changed "in the last forty years."

And now we come to the questions really at issue. "The points of objection to the revision," it is said, "are: 1, the granting of increased liberty of professional association; 2, increased liberty in profiting by mechanical inventions; 3, an increased liberty of promoting professional acquaintance." To these euphemisms for (1) consulting with pathists of all kinds, (2) patenting instruments, and (3) advertising without restraint, the writer should have added (4) "increased liberty in profiting by" the traffic in nostrums and certificates.

The Medical News has thus far said little as to patents, but it has called distinct attention to the effect of the alterations made in the section relating to patents *and nostrums*, in so far as the latter subject is concerned. In the article under review this subject is persistently and consistently ignored. Why? Is it because this is an "increase of liberty" that even the members of the committee are not prepared to defend?

Since our first writing upon the nostrum-question, in all the voluminous literature it has elicited we have yet to hear or read a single word of calm argument on the nostrum-side. Evasion of the issue or personal abuse is all that editors, contributors, or manufacturers' agents have yet produced. Here was a glorious opportunity for a frank and clear statement of the committee's reasons for endeavoring to remove the stigma from nostrum-using and nostrum-promoting. If anything decent could be said on that side, this was the time and place. We sincerely regret that the opportunity was not utilized.

To return to the arguments for "increased liberty":

1. *Professional association.* It is said that "the report does not dictate whom he [the physician] shall select . . . but affords him the liberty of making his own choice. . . . [It] would probably not alter in any respect the practical action of most physicians, but it is natural to suppose that all would feel better to be trusted more fully." Why, then, impose any restriction whatever? Why insist on "legal qualification"? Why insist on "good repute in the community"? If physicians are simply "to be trusted more fully," why the "more"? Why not trust us "fully" without restriction, "more" or less? A reputable physician will not select a disreputable consultant or law-breaking associate—so that the limitation as to "law-abiding and reputable" imposed by the committee becomes, when we talk of "trusting," simply insulting! The truth is, the committee wants to legalize consultation with homeopathists, and instead of saying so directly beats around the bush. There is only one proper way to effect this object, and that is to repeal the present prohibition against such consultation by a direct vote. Each voter will then know what he is voting on; and if the repeal be carried, the question will be relegated to the domain of individual conscience. As admitted, repeal "would probably not alter in any way the practical action of most physicians"; elevated public sentiment would be against consult-

ing with sectarians and quacks, and those who did so could not cite a platitudinous code in their defense.

2. *Patents.* "The report places the copyrighting of books and the patenting of mechanical appliances [and drugs?] used in medicine and surgery on the same basis. . . It is strange that gentlemen . . . . who have made lots of money out of the profession by securing copyrights . . . should kick against permitting the doctor who cannot write a book, but is able to invent a valuable instrument, from trying to make some money by his special talent."

In discussing the consultation question the element of money-making was not avowed; we therefore did not comment on it. Here, however, it comes undisguisedly to the front. Now, to do good work and be well paid for it is all right. We all want that. But to simply desire to "make some money out of the profession," by books or otherwise, is not a very "elevating" sentiment. We have in a previous editorial shown the difference between copyrights on books and patents on medicines and instruments, but will repeat for the committee's benefit, that *one is payment for instruction*, while *the other is tribute for permission to use a certain drug or instrument.* The copyright paid to the author of a book is exactly parallel with the fee paid a lecturer, or demonstrator, or instructor. The author teaches his reader how to do something, perhaps to make a diagnosis, or perhaps to perform an operation, or he imparts information as to the results of historic or scientific research, and he is justly entitled to payment for his labor. But, withal, he does not set up a monopoly; his opinions may be and are freely quoted, and thus made available to instruct many who never pay him a cent directly or indirectly.

On the other hand, one who patents a medicine or an instrument does set up a monopoly, and thereby exacts a tribute from each one who uses his instrument or his drug. For what is this payment made? For instruction? Not at all—but for permission to avail oneself of a certain method of treatment. It is but one step removed from nostrum-vending, and one is not surprised that a committee that defends the patenting of instruments and drugs should likewise remove the condemnation of the Code from the practice of using and recommending nostrums. But even granting, for argument's sake, that there is no difference between the copyrighting of books and the patenting of instruments and medicines, what should be the proper course of the committee and the Association? To legalize one wrong because another is committed, or to prohibit both? And what has the personal authorship of Dr. X, Dr. Y, or Dr. Z to do with a question of moral principle? A cause strong in itself does not resort to the *argumentum ad hominem.*

3. *Advertising.* "Concerning the increase of liberty given by the report to physicians in making known to *their professional brethren* their special qualifications, physicians outside of hospitals, dispensaries, and medical colleges are permitted to follow the example of those inside of these institutions. It simply puts the entire profession upon the same plane in advertising itself (*sic*)." [*Italics* are ours.]

Is this entirely ingenuous? Are cards and signs intended for the information of one's *professional brethren?* Do hospital physicians use cards and signs of the character proposed? Does any member of the committee sincerely believe that it would tend to "elevate the profession" to see such signs as, for example [if the dead giants named will forgive the association for the sake of the lesson]: DR. AGNEW, *Expert in Fractures and Amputations;* DR. WALLACE, *Obstetric Specialist;* DR. ATLEE, *The Celebrated Ovariotomist;* DR. GERHARD, *Special attention given to Physical Diagnosis*—exposed to public view? Can he imagine men of the caliber of those named resorting to such displays? Does he believe that the University of Pennsylvania, in placing Dr. Agnew's name in the public announcement of its course of instruction was "advertising" that surgeon? On the contrary, was it not making legitimate use of Dr. Agnew's reputation to advertise the University?

We agree with DR. CONNOR that there is much abuse in the matter of advertising persons, institutions, and operations. But the remedy is not the one he proposes—to legitimize advertising by everybody. Rather enforce the Code as it stands, and send to Coventry the "great hospital physician or college professor" whose "picture is printed in the great dailies," and whose "interviews and notices of big operations appear in the daily papers." THE MEDICAL NEWS has never concealed its opinions on this subject, and the editor might well object to the use of his name as an example of an evil he has gained a thousand enemies by fighting.

Once more we say: "Two Wrongs do not make a Right." The fault lies, not in the Code, but in ourselves. The Code gives no "exclusive privileges" in advertising or other shame. It is the timidity of the medical press and the medical profession in the presence of successful rascality that permits "hospital surgeons and college professors" to violate not only eternal ethical principles but the letter of the written Code. Let us try the effect of enforcing the law before we talk about repealing it, and thus legitimizing conduct that is now, at least theoretically, prohibited.

We repeat that under existing circumstances there is only one of two courses open to the American Medical Association, if it would retain its self-respect. One, and the best, is to retain the present Code unaltered; the other is to abolish the Code entirely, and trust to public opinion to maintain the proper standard of conduct. But to legalize improper conduct by the adoption of the majority report upon Revision would be as disastrous as it would be foolish.

EDITORIAL COMMENTS.

The Possibilities of Thyroid Therapy.—In view of the marvellous results obtained from the administration of some preparation of the thyroid gland in one form or another in the treatment of myxedema and allied affections, it is not at all surprising that a remedy so distinctly useful should be tentatively and experimentally employed in a large number of other conditions, including those in which there is obvious or only possible involvement of the thyroid gland, as well as those in which there is no reason whatever to suspect such involvement. Reports of successes must under these circumstances be received with judicial skepticism, particularly if not presented by one of established reputation and unassailable character. Doubt and hesitancy vanish, however, in the face of reports made by such a careful observer, conservative thinker, and competent authority as BYROM BRAMWELL, of Edinburgh, who at the last meeting of the British Medical Association reported successful results from the employment of preparations of the thyroid gland in the treatment of psoriasis. Further observations seem but to confirm the earlier conclusions, and to indicate even a still wider field of usefulness for preparations of the thyroid gland. Being aware that cases of myxedema manifested a predisposition to tuberculosis, and not infrequently died from the intercurrent disease, and reasoning that this association might be due to the absence from the juices and the tissues of the body of the secretion of the thyroid gland, DR. BRAMWELL (*British Medical Journal*, No. 1737, p. 786) was led to use of thyroid extract by internal administration in the treatment of two cases of lupus that came under his observation, and with pronounced benefit. The results in these cases suggested the possibility of the thyroid extract also being useful in other forms of tuberculosis, and as full doses are rather depressing, it would be wise, before employing the remedy in cases of pulmonary tuberculosis, to test the effect of its administration in cases of scrofulous disease of the cervical glands, bones, and joints in which the disease is not sufficiently advanced to demand surgical treatment. Finally the thought is thrown out that by improving the nutritive condition of the cutaneous structures thyroid extract may prove useful in the treatment of leprosy, and that by increasing the resisting power of the tissues it may also be of service in cases of carcinoma. From the apparently selective action of the thyroid preparations upon the skin and its adnexa we have ourselves thought that good results ought also be obtained by the internal administration or subcutaneous injection of thyroid extract in the treatment of erysipelas.

Migraine in Infancy.—Intelligent observation and accumulating experience show that infancy does not escape many of the neuroses (perhaps we may learn to say none of the neuroses) observed in mature life. The diagnosis is obviously embarrassed by the difficulties attendant upon the elicitation of symptoms. Thus, it has been conclusively demonstrated that infants and young children may be unequivocally hysterical, and there is reason to believe that they may be similarly affected with migraine. Evidence in support of the latter proposition is furnished by the report by BETZ (*Memorabilien*, March 24, 1894, p. 79) of the case of a female infant, thirteen months old, that at a time when influenza was prevalent, was seized with an attack of febrile gastro-intestinal catarrh, attended with diarrhea. In the course of this illness the infant was seized with twitching, affecting principally the hands and arms, occurring intermittently and also during sleep. It further indicated by gesture its complaint of pain in the head. Consciousness was perverted, but not lost. It was observed that the child manifested a tendency to grasp the left side of its head and to lie upon its left side, and on examination the left side of the head was found to be somewhat smaller in size than the right, while further investigation disclosed the fact that an elder sister and the mother both presented a similar asymmetry and suffered from attacks of migraine. The interesting features of the case are the age, the sex, the heredity, and the asymmetry of the face. In a diagnostic connection it is pointed out that on palpation the temperature may be found higher on the affected side than upon the opposite side, and that during the attack of pain the upper lid upon the affected side displays a tendency to droop. Therapeutically general rather than special measures are indicated. Diathetic and hereditary tendencies, as well as complicating conditions, are as far as possible to be corrected or removed. Opium may be used internally and topically with caution; ice-water compresses, topical applications of menthol, cocain, or ether may aid in the relief of pain.

New York Colony for Epileptics.—Some months ago we had the pleasure of noting (THE NEWS, Dec. 16, 1893, p. 694) the opening in Gallipolis, Ohio, of the first State Hospital for Epileptics in the United States. We have the gratification of being able to announce that the Legis-

lature of New York State has passed, and the Governor has signed, a bill establishing a colony for epileptics in that State. The colony is named after the late Oscar Craig, for some years President of the State Board of Charities. The bill provides for the purchase of a tract of 1875 acres of beautiful land in the Genesee Valley, near Mount Morris, in Livingston County. This tract is all in one piece, well watered by brooks, and consisting of fine fields, wood-land, and orchards, and already provided with picturesquely-grouped buildings to the number of thirty-five. It has been a colony of the Shakers for twenty or thirty years, and is perfectly adapted to its new use.

The law requires that all of the buildings put up should be on the village plan. A board of five managers is provided for, and by the appointment of the Governor has been constituted as follows: Dr. Frederick Peterson, of New York; Mrs. C. E. Wadsworth, of Geneseo; George M. Shull, of Mount Morris; Dr. Charles E. Jones, of Albany; and W. H. Cuddeback, of Buffalo. The managers serve without salary, and meet at the colony once or oftener monthly.

At the organization of the Board in Albany, on the 3d of May, Dr. Frederick Peterson, of New York, was elected President, and George M. Shull, of Mount Morris, Secretary.

A medical superintendent, steward, matron, pathologist, nurses, school-teachers, teachers of various industries and arts, and so on, are to be appointed as needed; but the colony will probably not be ready to receive patients before the autumn of 1895.

It is thought that the colony will ultimately number from fifteen hundred to two thousand members. As soon as possible the six hundred epileptics in the county almshouses will be taken in charge. Later private patients will be received at prices corresponding to the accommodations asked for. It is believed that the colony will become self-supporting in the course of time, and that it will grow into an industrial and agricultural village that will more than rival the similar and famous colony at Bielefeld, Germany, upon which this is, to a certain extent, modelled.

The managers may accept any bequests of persons interested in the welfare of epileptics, and it is anticipated that many charitable wealthy people will build cottages upon the splendid sites on the tract to bear their names and exist as lasting memorials to their desire to serve humanity in this wise.

The time has arrived when the State of Pennsylvania must make similar provision for her large contingent of epileptics. The Legislature can no longer fail to heed the appeals from County Medical Societies and the State Medical Society for the establishment of one or more epileptic colonies.

Dr. William P. Dodson died May 11th, at his home in Philadelphia, at the age of ninety-three years. He had spent the greater part of his professional life in the Southern United States, whither he had been compelled to remove on account of some affection of the throat.

Wm. Goodell, M.D., LL.D.—The degree of Doctor of Laws was conferred upon Dr. Wm. Goodell at the recent commencement of Jefferson Medical College.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Forty-fourth Annual Session, held at Philadelphia, May 15, 16, 17, and 18, 1894.

First Day—May 15.

Morning Session.

The Forty-fourth Annual Session of the Medical Society of the State of Pennsylvania, which was originally to have convened at Gettysburg, was opened on Tuesday morning, May 15th, in the Presbyterian Church building, Twelfth and Walnut Streets, Philadelphia. Delegates from all the county medical societies of the State were present in large numbers, and the usual spirit of fraternal interest was manifested. Shortly after the stated hour of convening, 9.30 o'clock, the President, Dr. H. G. McCormick, of Williamsport, called the meeting to order, and the meeting was inaugurated by prayer by the Rev. A. B. Philputt. His Honor, Mayor Stuart, delivered the address of welcome, in which he dwelt upon the fame and pre-eminence of Philadelphia as a center of medical learning and the propriety of its selection as the place of convention for the State Association. Dr. E. E. Montgomery, the Chairman of the Committee of Arrangements, also welcomed the visiting delegates to the hospitality of the city and medical fraternity and presented the printed program as the order of business for the session.

The report of the delegates to the session of the American Medical Association held last May in Milwaukee, Wis., was made by Dr. Wm. B. Atkinson. Chairman of the Committee. He reported a successful and pleasurable meeting, with an attendance of almost nine hundred delegates from the entire country. The report was accepted as read and placed on file.

Dr. Atkinson, as Secretary of the State organization, reported a membership of 2500. All of the county societies have shown a slow but healthy growth. The number of members added during the year is slightly in excess of that of previous years. He urged the secretaries of the various medical societies to invite all members of the profession in good standing and not already members to unite with their respective societies.

The Treasurer, Dr. G. B. Dunmire, of Philadelphia, reported a cash balance in bank of $1978.49, after deducting the expenses for the year, which amounted to $2143.75. The report was referred to the Auditing Committee.

On motion of Dr. Atkinson, all members of the Philadelphia County Medical Society not delegates to the meeting were invited to attend the sessions of the Convention and participate in the discussions.

Dr. Edward Jackson, in behalf of the Committee on Publication, reported that 2500 copies of the *Transactions* of the Association had been printed at an expense of $1070. Copies of these had been distributed among the various hospitals, colleges, and county medical societies of the State. The committee suggested that the character of the binding of the *Transactions* be improved, which could be done with but slight additional expense. It was also suggested that a page be

devoted to information concerning the American Medical Association, giving instruction as to how to become a member in that organization, etc. The report of the committee was accepted.

Dr. CHARLES W. DULLES, Chairman of the Committee on Scientific Business, stated that owing to the remoteness of the homes of the members of the committee, the work had been carried on principally by correspondence. Progress was reported, and expenses amounting to $33.73 incurred, which, it was resolved, should be placed in the hands of the Treasurer for payment.

The Legislative Committee, DR. H. G. MCCORMICK, of Williamsport, Chairman, reported the passage of the Medical Examiners' bill, and the appointment of the members of the Board.

The first examination under the new law of physicians desirous of entering upon medical practice in Pennsylvania will be held on June 11, 1894, at Pittsburg and Philadelphia.

The Committee also reported that, in accordance with the instructions given it by the Society, it memorialized the Legislature on the subject of the care of the insane. The Senate passed a bill providing for the changes which the Society desired, but the House of Representatives failed to do so. The report of the Committee was accepted, and the Committee discharged with the thanks of the Society.

DR. LIPPINCOTT, Chairman of the Committee on Contagious Ophthalmia, stated that the Committee had investigated the methods of eradicating this disease. Circulars had been sent to the ophthalmic surgeons throughout the State soliciting suggestions and assistance. The greatest danger lies in the general ignorance as to the gravity of the affection. The Committee urged additional inspection and also the importance of more rigid examination of immigrants for the existence of trachoma, which it has been ascertained is most common in New York City, chiefly because that city is the main port of immigration in this country. The report was accepted and the Committee discharged.

DR. ATKINSON read the resolutions adopted by the Philadelphia County Medical Society concerning the conduct of the *Journal of the American Medical Association* in reference to nostrums, etc. These resolutions were published in THE MEDICAL NEWS of April 28, 1894, p. 463. The discussion of the communication was postponed until Wednesday morning.

DR. G. M. GOULD read the following preamble and resolution, which were unanimously adopted:

Whereas, By all physicians it is admitted that a large proportion of the blindness of the world is due to the disease called ophthalmia neonatorum; and

Whereas, The well-known treatment of this disease by a physician, if at a sufficiently early period in its course, almost always results in preventing the blindness that would otherwise follow; and

Whereas, A committee appointed by the Ophthalmological Section of the American Medical Association at its last meeting has, after thorough consideration, drafted a blank form of a law and urged its passage by all State Legislatures, as well as advised all physicians to aid in securing the passage of such a law; and

Whereas, This blank form of a law drafted by the said Committee is as follows:

The people of the State of —— represented in Senate and Assembly, do enact as follows:

SECTION 1. Should one or both eyes of an infant become inflamed, or swollen, or reddened at any time within two weeks of its birth, it shall be the duty of the midwife or nurse having charge of such infant to report in writing within six hours to the health-officer or some legally qualified physician of the city, town, or district in which the parents of the infant reside, the fact that such inflammation, or swelling, or redness of the eyes exists.

SEC. 2. Any failure to comply with the provisions of this act shall be punished by a fine not to exceed two hundred dollars, or imprisonment not to exceed six months, or both.

SEC. 3. This act shall take effect on the —— day of ——, eighteen hundred and ninety- ——.

And whereas, Five States have already placed upon their Statute Books laws similar to or identical with the foregoing law, while in other States the same measure is under consideration; and

Whereas, The Philadelphia County Medical Society on May 9th unanimously passed a resolution indorsing the law recommended by the Committee of the Ophthalmological Section of the American Medical Association, and appointed a committee to devise means and methods of securing the enactment of such a law by the Pennsylvania State Legislature; therefore be it

Resolved, 1. That in the opinion of the Medical Society of Pennsylvania it is of the most vital importance to the welfare and happiness of the community, and to the good name of the State of Pennsylvania, which has always been foremost in matters pertaining to the health of her citizens, that the law recommended by the Committee of the Ophthalmological Section of the American Medical Association should be enacted by the Legislature of the State, and the Medical Society of Pennsylvania respectfully requests the Honorable Representatives of the State at Harrisburg to do all in their power toward placing such a law upon the Statute Books of the State of Pennsylvania.

2. That a committee of three be appointed to coöperate with the Committee of the Ophthalmological Section of the American Medical Association and the Philadelphia County Medical Society, to devise means and methods of securing the enactment of such a law.

On motion of DR. JACKSON an amendment was made and carried, that the Committee be given power to add to itself associate members.

DR. HIRAM CORSON moved that a Legislative Committee be appointed, and instructed to investigate the subject of the care and treatment of the insane, and the organization and construction of hospitals for the insane. The motion was referred to the Committee on Legislation when said committee should be appointed.

On motion of DR. ATKINSON, Dr. R. P. Granger, of New York, was extended the courtesies of the floor.

DR. J. C. GABELL, of York, offered the following resolution:

Resolved, That a committee of seven be appointed by the President of this Society to consider the feasibility of and make suggestions relative to the appointment of an inspector, whose duty it shall be to aid the State Board of Medical Examiners of Pennsylvania to more efficiently carry out the best interests of medical legislation in this Commonwealth, the committee to report under unfinished business on Wednesday. Carried.

An invitation was read from the Luzerne County Medical Society to hold the meeting in 1895 at Wilkesbarre, Pa. Referred to the Committee on Nominations. Also a resolution was offered to the effect that the Society enters its protest against the use of the name "Allopath," as applied to regular members of the profession. Carried.

DR. S. SOLIS-COHEN offered a resolution expressing it as the sense of the Pennsylvania State Medical Society that the Code of Ethics of the American Medical Association be not altered, and instructing its delegates to vote in accordance therewith. Carried unanimously. At 11.30 o'clock the meeting adjourned until 3 P.M.

AFTERNOON SESSION.

The Address in Surgery, delivered by Dr. G. D. NUTT, of Williamsport, was limited to some general remarks upon recent progress in surgery. The advances in brain-surgery and spinal surgery, including the treatment of epilepsy, the modern methods of hysterectomy, and the management of ectopic pregnancy, the exploration of the kidney, were all touched upon. Attention was called to the marked influence of aseptic surgery in reducing the mortality of major operations. The value of Wyeth's hip-joint amputation by means of skewers received especial mention. Dr. Nutt dwelt largely upon the importance of an early diagnosis in such medico-surgical diseases as appendicitis, obstruction of the bowel, etc.

"The Radical Cure of Hernia," was the title of an interesting paper read by DR. E. LAPLACE, of Philadelphia, who claimed that the term "radical" indicated of necessity a certain amount of accuracy. In considering the subject of the predisposing causes of hernia, he doubted the importance of elongation of the mesentery as a causative factor, but considered weakness of the abdominal walls as the most essential element in the etiology. The treatment of hernia includes removal of the hernia and complete retention of the bowel within the abdominal cavity; and secondly, the use of such measures as will insure strengthening of the abdominal walls. There have been advocated many methods of removing a hernia, but the writer favored the McBurney method, in which the sac is dissected and ligated, and granulation of the canal is favored by packing with iodoform-gauze. The firmest citatrices are those resulting from burns; therefore, he suggests the cauterization of a portion of the canal. Three weeks of granulation are absolutely necessary to prevent a non-recurrence of the condition. In all cases of small hernia, Bassini's operation has been followed in his hands by gratifying results. He reported 87 cases operated upon by himself in the last four years, with a mortality of *nil*; 27 scrotal cases, all large, were operated on by McBurney's method, resecting the sac, and transplanting the cord, as in Bassini's method. There were three recurrences. Sixty operations were performed according to Bassini's method, and a double operation in four patients. Silkworm-gut was used altogether. In five cases there were signs of recurrence, and these five patients were suffering from general malnutrition, and had concomitant conditions (syphilis, tuberculosis, etc.). Suppuration must be prevented by a judicious application of sutures to prevent strangulation of the tumor—not too tightly drawn—and by thorough asepsis. For three months an abdominal support must be worn. Massage of the abdominal walls was recommended to increase the nutrition of these parts. In conclusion, he regarded hernia as primarily a condition dependent upon trophic changes in the abdominal wall. If the hernia be small, the sac is not opened; if large, it is opened by McBurney's method, and the canal is cauterized with the thermocautery, and allowed to granulate. He recommended early operation for a radical cure in every case of incipient hernia.

DR. F. LE MOYNE, of Pittsburg, read a paper entitled "Modification of Pirogoff's Amputation." The modification consists in a retention of the extremities of the tibia and fibula to prevent shortening. The calcaneum is sawed through less obliquely. Good results have followed this operation. Dr. Agnew had done the same operation, also with good results.

DR. J. V. SHOEMAKER, of Philadelphia, gave some interesting clinical observations upon diseases of the skin. Six patients were shown suffering from psoriasis. The etiology varied in each case. In one case there was associated a nervous condition; in another the affection was due to rheumatism and a gouty diathesis; in another there was a disturbance of the gastro-intestinal tract. The rheumatic case, fifteen years ago, under the administration of potassium iodid, had been cured. The rheumatism has now returned, and with it the eruption. The man was taking ten grains of sublimed sulphur and one grain of cream of tartar, and the eruption was gradually fading. The treatment in each case varies with the cause. If due to gastro-intestinal lesions, dilute hydrochloric acid and liquor pepsin before meals, with sulphate of strychnin after meals, will suffice. One case had been given fried thyroid gland in the morning and evening, and the lesion of the skin was fading. Dr. Shoemaker was unable to say just how the thyroid extract acted in psoriasis.

DR. J. C. MCALLISTER, of Driftwood, read a paper on "Puerperal Eclampsia and its Treatment chiefly by the Hypodermatic Use of Veratrum Viride." He adopted the view of the etiology of the affection which ascribes it to the presence of retained excrementitious matter in the blood. The presence of albumin in the urine is not sufficient cause for prognosticating the onset of eclampsia; the albuminuria is rather the result of the eclampsia. The proper treatment of eclampsia is mainly eliminative by means of the skin, bowels, and bladder. For this purpose a variety of remedies has been advocated—venesection, chloral, chloroform, morphin. They are all of service, but in veratrum viride we have a drug which is almost free from danger, and which has a marked effect in reducing the action of the heart. By watching the pulse the efficacy of the treatment can be demonstrated. He recommended fifteen drops of the tincture as an initial dose, with whiskey or brandy as required. As a rule, the veratrum should be continued for a day or two until the convulsive tendency is over. When there is not great stupor he advised morphin hypodermatically in addition to the veratrum. In stertorous cases atropin is especially indicated. In one case he administered $\frac{1}{40}$ grain in divided doses within twenty minutes.

DR. FISHER, of Philadelphia, considered the time of the occurrence of the convulsions as an important ele-

ment in the treatment. He favored the use of hot baths rather than the use of diaphoretics internally administered.

"Chronic and Recurrent Appendicitis" was the subject of a paper read by DR. JOHN B. DEAVER, of Philadelphia, which will be published in a future number of THE MEDICAL NEWS.

DR. ORVILLE HORWITZ, of Philadelphia, contributed a paper upon "The Treatment of Stricture of the Urethra." He said that, generally, dilatation is the usual and safest method of treatment. A small-sized bougie should be tried first, in order to avoid causing abrasion or laceration of the mucous lining; the size of the instrument may be increased as the pain and bleeding diminish. The instrument should be introduced once in three days, and should be sterilized and anointed with an antiseptic ointment containing oil of eucalyptus. This is the safer method in diabetes and advanced renal disease. The death-rate of internal urethrotomy is 2 per cent., while dilatation is never followed by death. In *continuous* dilatation a small filiform bougie should be used and allowed to remain three days. Enough dilatation will then have been accomplished to proceed with some other method. This plan is of service in cases of small stricture in the membranous portion of the urethra, or in cases in which the stricture at any point is very tight. A preliminary injection of carbolized oil is a valuable procedure.

DR. DEAVER was surprised to hear that the mortality of internal urethrotomy was 2 per cent. He had operated many times, without a death. He was not an advocate of the operation in all cases, but believed it has a larger scope than that given it by Dr. Horwitz. He has had more success in external urethrotomy without, than, with the use[of a staff.

DR. JOHN H. BRINTON, of Philadelphia, in the treatment of deep stricture indorsed Dr. Horwitz's paper. He had employed rapid dilatation for twenty years, and had never met with a death. He had never met with a deep-seated idiopathic stricture through which he could not pass a filiform bougie.

DR. O. H. ALLIS, of Philadelphia, read an interesting paper on "Cramming in Medical Schools," which is to appear in a future number of THE NEWS.

The following papers were read by title: "Section of the Tendo Achillis in Certain Fractures and Dislocations of the Lower Extremity," by Dr. T. S. K. MORTON, of Philadelphia; "The Treatment of Naso-Pharyngeal Catarrh," by DR. WM. R. HOCH, of Philadelphia; "Thyroidectomy in the Treatment of Goiter," by DR. JOHN B. ROBERTS, of Philadelphia; "Rural Sanitation," by DR. T. H. WEAGLY, of Marion; and "Amputation Below the Knee," by DR. M. PRICE, of Philadelphia.

DR. D. BRADEN KYLE, of Philadelphia, contributed a paper entitled "The Effect of La Grippe on Normal and Diseased Respiratory Mucous Membranes." He said that the respiratory mucous membrane consists of a basement-membrane upon which are epithelial cells, and under which are bloodvessels, glands, and nerves. Its essential function is to secrete mucus. Any inflammatory lesion first alters the submucosa; this alteration depends upon the variety and the severity of the inflammation. He has found no germ constantly present. In those cases without preëxisting lesion of the mucosa the transudate from the vessels is more than a mere inflammatory exudate; it is a highly coagulable, albuminoid material which infiltrates the tissue. In those cases in which there were preëxisting lesions the exudate was of the same character, but its effect on tissue and function was inconstant, being controlled largely by the preexisting pathologic alteration. In all conditions the mucosa must be cleansed and rendered aseptic, after which a stimulating application may be made. Alteratives as well as tonics and stimulants must be administered internally.

SECOND DAY, MAY 16TH—MORNING SESSION.

The meeting was called to order at 9.30 o'clock, when the "Address in Medicine" was delivered by Dr. W. S. FOSTER, of Pittsburg. He spoke of the great multiplicity of proprietary mixtures, especially those containing the coal-tar preparations, which were likely to give rise to considerable confusion in the proper selection of medicines. The reaction in favor of blood-letting was noted, and also the controversy over the respective merits of chloroform and ether. The employment of tincture of digitalis in continued fevers had been followed by excellent results. He believed that the early administration of digitalis in typhoid fever, producing as it does an increase in the activity of the heart, will tend to tide the patient over the period of depression. In pneumonia, also, in conjunction with strychnin, it is of service. The use of free oxygen gas in pneumonia is a valuable advance in the treatment of that disease. He believed that preventive medicine has assumed such proportions as bid fair to place it in the foremost rank in the management of pathologic conditions.

"Christian Science in its Relation to the Medical Profession," was the title of a thoughtful paper read by Dr HILDEGARDE H. LONGSDORF, of Carlisle. She regarded this doctrine as the most pretentious and most successful outgrowth of our higher civilization. In an ingenious way she revealed the absurdities of this highly developed species of quackery.

On motion of Dr. COHEN, of Philadelphia, it was agreed to have one thousand copies of Dr. Longsdorf's paper printed by the Committee on Publication, for distribution among the laity.

DR. S. S. COHEN delivered a spirited address upon the query, "Should the *Journal of the American Medical Association* be used to Promote Quackery?" He paid an eloquent tribute to the *Pittsburg Medical Review*, which he considered as the cleanest and most outspoken medical publication in this country. He quoted the article in the Code of Ethics of the American Medical Association on patent medicines, and the duties of physicians in regard to their recognition, manufacture, and dispensation. This is an organic law of the American Medical Association, and never since its promulgation has it been repealed. It is a trust of the American Medical Association, and should as such be religiously carried out, yet the pages of the journal of this Association are filled with the advertisements of secret nostrums. In criticising the Trustees of the *Journal*, he was not criticising them personally, but only their official conduct, which he believed should ever be open to criticism. He protested that the Pennsylvania State Medical Association,

that the American Medical Association, be not made partners in such affiliations with the proprietors of quack preparations.

DR. THOMAS, of Philadelphia, stated that one of the reasons for the foundation of the *Journal of the American Medical Association* was that the profession should have a pure, ethical journalism. Now we see that *Journal* going as far or even further than other journals in helping to support itself by publishing quack advertisements. He offered resolutions embracing those adopted by the Philadelphia County Medical Association, resolutions to the same effect, but further sanctioned by the action of the State Medical Association, and to be presented to the American Medical Association at its meeting in San Francisco.

Resolved, That the Medical Society of the State of Pennsylvania hereby indorses the resolutions concerning the conduct of the *Journal of the American Medical Association* transmitted from the Philadelphia County Medical Society.

Resolved, That it is the opinion of this Society that if the finances of the American Medical Association do not permit of the publication of a journal that does not violate the Code of Ethics by the insertion of notices of secret nostrums and other objectionable advertisements, the Trustees should be instructed to cease publication.

Resolved, That these resolutions, together with the resolutions of the Philadelphia County Medical Society, be officially transmitted to each Trustee of the American Medical Association, and that the delegates to the American Medical Association elected at this meeting be instructed to present the same to the meeting of the American Medical Association at San Francisco, and to use every honorable endeavor to secure such action as shall effectually remedy the matter complained of.

DR. BISHOP suggested that if it had become necessary for the support of the *Journal* that secret nostrum advertisements find a place upon its pages, it would be well to make the suggestion at the San Francisco meeting that the publication of the *Journal* be stopped or that the Board of Trustees be reconstructed.

DR. JEFFRIES, of Delaware County, suggested that if he or any other member of any of the County Medical Societies should open themselves to such criticism as had the Board of Trustees of the *Journal of the American Medical Association*, they would have been reprimanded, suspended, or expelled from the medical organization, and he would be inclined to take similar action against the Trustees of the *Journal*.

DR. B. H. DETWILER, of Williamsport, read a paper entitled "Croup and Diphtheria," in which he advocated early depletive and revulsive treatment in all cases of membranous croup. In this way he believed that the high mortality of the disease could be diminished and intubation not be required.

DR. S. SOLIS-COHEN regarded non-diphtheric or true croup as being exceedingly rare. True croup is a sthenic inflammation, while diphtheric croup is toxic and is associated with a degree of toxemia. Hence the danger of confounding the two conditions.

DR. CHARLES HERMON THOMAS, of Philadelphia, read a paper entitled "Eye-strain from Muscular Causes and its Treatment by Tenotomy." He regarded the diplopia-tests as indispensable in arriving at any conclusion. He did not believe that a complete tenotomy is required in every case of heterophoria. A gain of from 1° to 8° may be obtained without complete severance. He quoted cases from his note-book.

DR. LIPPINCOTT, of Pittsburg, regards photophobia as the principal symptom of muscular asthenopia. He would also call attention to the association existing between epilepsy and muscular asthenopia.

Under the head of new business DR. GABLE presented the following report of the committee appointed on Tuesday:

Resolved, That the Secretary of each county society is requested to forward at once to the Secretary of the State Board of Medical Examiners a correct list of registration of doctors under the last Act, on and from the 1st day of March last, and quarterly thereafter; and in communities where there are no county societies the President of this Society shall appoint a member of this Society living in such county to procure such list, and in any case of neglect by either the officers aforesaid or the appointee to send such a list, the Secretary of the State Board of Medical Examiners of this Society shall be empowered to procure the same; and further be it

Resolved, That we recommend that $500 of the moneys of the Society, or so much thereof as may be necessary, be appropriated for the examination of the registration of physicians in this State, with the view of enforcing the Medical Examiners' Act lately passed, said money to be expended only under the direction of the State Board of Medical Examiners representing this Society, and that they shall approve all bills before being paid. Further, that the said Board of Examiners report at the annual meeting of this Society their action and expenditures under this resolution.

DR. LE MOYNE, of Allegheny, offered a resolution to the effect that at the meetings of the State Medical Association the time allotted to the reading of papers be reduced to ten minutes, and the discussion thereof to five minutes per man. As this resolution involved an alteration of the Constitution, it was laid on the table until the next annual meeting.

AFTERNOON SESSION.

At 3 o'clock the Committee on Nominations, Edward Jackson, M.D., Chairman, made its report. The officers selected for the succeeding year were as follows: President, Dr. John B. Roberts, of Philadelphia; First Vice-President, Dr. S. C. Stewart, of Clearfield County; Second Vice-President, Dr. J. A. Lippincott, of Allegheny County; Third Vice-President, Dr. J. H. Wilson, of Beaver County; Fourth Vice-President, Dr. R. Armstrong, of Clinton County; Secretary, Dr. W. B. Atkinson, of Philadelphia; Assistant Secretary, Dr. H. G. Kreutzman, of Franklin County. Chambersburg was selected as the place of the next meeting.

The address on "Mental Diseases" was delivered by DR. T. M. T. MCKENNAN, of Pittsburg. He said that the toxic origin of insanity is now generally accepted. This poison may be generated in the body of the mother or in the body of the patient himself. Auto-intoxication is the cause and not the effect of the mental condition. This may be proved by the fact that injection of the urine of a maniacal patient into the tissues of an animal will produce delirium and exaltation of the corporeal

activity, while the urine of a melancholy patient when injected produces marked bodily depression. The predisposition to psychoses should contraindicate operative procedure. The propriety of examining insane female patients cannot be doubted. The main cause of insanity in women lies in disease of the pelvic organs. The frequency of renal inadequacy in the insane has been noted, and insanity due to kidney-trouble is much more frequent than has been supposed. The close etiologic relationship between syphilis and general paralysis of the insane is now becoming quite clear. Hypnotism as a curative agent is only of value in cases of insanity of hysterical origin.

Dr. Charles W. Dulles, of Philadelphia, presented a report on "Hydrophobia," which will be published in a future number of The Medical News.

Dr. Charles K. Mills, of Philadelphia, was somewhat conservative in his views as to whether or not hydrophobia as a disease does exist. It is at any rate an extremely rare disease. He has seen a patient with sclerosis die in the Philadelphia Hospital with symptoms of hydrophobia; other nervous diseases may give rise to the symptoms of hydrophobia, and doubtless many of the so-called cases of hydrophobia are in reality cases of mistaken diagnosis.

Dr. S. MacCuen Smith, of Philadelphia, read a paper on "Simple Inflammation of the Middle Ear and their Sequelæ." In all cases the ears of the newborn child should be examined, and if no accumulations in the external auditory meatus be found, and the membrane seems to be inflamed to any extent, the middle ear should be inflated according to Politzer's method. There are two forms of acute inflammation of the middle ear: one is due to exposure to cold, wet, etc., and the other is due to the entrance of some infectious agent. Whatever the cause of the inflammation, the inflammatory exudate will undergo fatty degeneration unless removed. Inflation of the ear is the important element of treatment in most cases. Deaf-mutism must be regarded as a sequel of some preëxisting inflammatory disease.

Dr. Charles H. Burnett, of Philadelphia, had never seen an acute inflammation of the middle ear in a newborn child. The common cause of dermatitis in the external ear is swabbing out of the canal with cotton, and this in time may produce middle-ear disease. The external ear of the newborn child should be left severely alone.

Dr. B. A. Randall, of Philadelphia, suggested that in making an examination of the ear of an infant the auricle should be drawn *downward* as well as backward in order to facilitate the procedure. When injections are used in the ear, the water should be hot, of a temperature of from 110 to 118°.

Dr. Anna M. Fullerton, of Philadelphia, read a paper entitled "Studies in Obstetrics and Gynecology," based on eight years' experience in the hospital of the Woman's Medical College.

Dr. W. C. Hollopeter, of Philadelphia, contributed a paper entitled a "Brief Review of the Therapeutics of Whooping-cough." He considered whooping-cough as a very fatal, perhaps the most fatal of all diseases of infancy. This was due to the gravity of its numerous sequelæ. He considered an early recognition of the nature of the disease during the catarrhal stage as of the utmost importance. In making his diagnosis he trusts to the peculiar puffiness often observable in the mucous membrane of the eyes.

Dr. G. G. Davis, of Philadelphia, gave an interesting exhibition of some "Cases of Amputation near the Ankle," one of which had been operated upon by a country physician with perfect results; another, a boy of seventeen, had had a Chopart's amputation, and was able to go off on long tramps. Dr. Davis wished to prove the superiority of the low amputation over amputation below the knee.

The "Address in Obstetrics" was delivered by Dr. E. E. Montgomery, of Philadelphia. He touched upon a few of the more important conditions from a surgical standpoint. Symphysiotomy he regarded as capable, within certain limits, of decreasing the danger to both mother and child. The objections that had been advanced against the operation were that it was both dangerous and tedious; that there was danger of sepsis and of injury of the urethra and bladder, and that it necessitated another operation to deliver the child. While these are well founded, the other operations and obstetric conditions are of still greater gravity. In regard to puerperal sepsis, he stated that the tissues may be infected from the genital tract by an extension of the infection through the tissues, by extension through the tubes, and by extension by the bloodvessels and lymphatics. The extension by the bloodvessels is the most virulent. Curettement, douching, and thorough drainage of the cavity of the uterus by packing with iodoform-gauze constitute the treatment of this condition.

If secondary foci of the disease have developed in the uterine wall with pus-collections, extirpation of the uterus is indicated after exploratory section. It is remarkable how popular the operation of vaginal hysterectomy has become. It is used now not only for carcinoma of the cervix, but in cases of small bleeding fibroids, and in women suffering from uterine sepsis, in whom the disease is confined to the uterine walls. The speaker recommended cauterization of the stump, and the carrying of iodoform-gauze through the cervical canal into the vagina.

(To be concluded.)

NEWS ITEMS.

The Fifth District Branch of the New York State Medical Association will hold its tenth annual meeting in Brooklyn on Tuesday, May 22, 1894. The President, J. D. Rushmore, will deliver an address on "The Prevention of the Disagreeable and Dangerous Symptoms produced by Ether as a General Anesthetic." Other papers will be read as follows: "The Dietetic Treatment of Consumption," by T. J. McGillicuddy; "The Treatment of Chronic Oöphoritis by Electricity," by Edward Sanders; "Report of a Case of Chronic Peritonitis with Intestinal Fistula; Celiotomy; Enterorrhaphy; Recovery," by Frederick Holme Wiggin. General discussion of "Vaccination," opened by F. A. Jewett, S. E. Jelliffe, and H. H. Morton.

Prof. Escherich, the distinguished pediatrist, of Gratz, has been elected to the chair of the Diseases of Children, to succeed Heubner at the University of Leipsic.

THE MEDICAL NEWS.

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VOL. LXIV. SATURDAY, MAY 26, 1894. NO. 21.

ORIGINAL ARTICLES.

PARAXANTHIN AS A FACTOR IN THE ETIOLOGY OF CERTAIN OBSCURE NERVOUS CONDITIONS.

BY B. K. RACHFORD, M.D.,
CLINICIAN TO CHILDREN'S CLINIC, MEDICAL COLLEGE OF OHIO, CINCINNATI, OHIO.

THIS paper narrates the history of a patient that, at irregular intervals, had paroxysmal nervous attacks, the etiology of which was very obscure. After several months of careful study of this case I thought it possible that paraxanthin, a poisonous leukomain of the uric-acid group, by occurring in excess in the blood of this patient, might be the cause of these peculiar nervous attacks. Acting upon this idea, I procured eight liters of urine passed by the patient the day before, the day of, and some days after, a severe attack. From this urine 8 c.c. of a solution of paraxanthin was separated. One minim of this solution injected into the peritoneal cavity of a mouse produced symptoms much like those from which my patient suffered. The inference is drawn that we may have in the poisonous leukomains of the uric-acid group important and heretofore altogether overlooked factors in the production of certain nervous diseases and conditions.

That the reader may judge of the correctness of this inference, I give here a detailed history of the case and of the experiments upon which the inference is based.

Mrs. X., sixty-three years of age, is married, and the mother of six grown children. The family history is negative, except that "one sister had some nervous trouble of the heart." The patient was always a hard-working woman until a few years ago, when her grown daughters took charge of all the household affairs, and left her without occupation. She has always been rather stout, but of late years her hearty eating and inactive life have made her much stouter than before; she now weighs more than two hundred pounds, and spends most of the day in her easy chair; she has quite as capacious an appetite as she has ever had, and is now, as she has always been, especially fond of meat. From her earliest remembrance to September, 1892, she suffered from periodic attacks of "sick headache," but since this date she has not had a single characteristic sick headache; instead of sick headache she has had epileptoid attacks, which have continued to the present time at about the same interval as her previous attacks of migraine. It is the origin of these epileptoid attacks, and of the previous megrim, that will especially interest us in the study of this case.

In September, 1892, she fell in her first "spell," and was carried into the house in an unconscious condition; after about thirty minutes she regained consciousness, but did not know anything about what had happened. For twelve hours after the attack she had a severe headache, which passed away, leaving her as well as usual. The doctor who saw her in this and many of her subsequent attacks thought in the beginning that they were apoplectic. She continued to have attacks similar to this one at intervals of about three or four weeks. In all of these "spells" she became unconscious, and remained so for from twenty to forty minutes, when she would regain consciousness, to find herself suffering from a severe headache, which would pass off in from twelve to twenty-four hours, leaving her quite well again. These attacks came on without apparent exciting cause, and with absolutely no warning; she feels as well, if not better, than usual just before the attack, and they not infrequently come on at night during sleep. A number of times the patient has been seized with an attack while on her feet, and has fallen heavily to the floor. On one occasion she bruised her face and shoulder by a fall of this kind. The after-headache became less and less severe as the time passed, until at the present time "there is almost no headache following a spell." After five or six months these epileptoid attacks were less frequent, so that five or six weeks would at times intervene between the attacks, but such a long interval was usually followed by an unusually severe attack, and not infrequently by two attacks within a few hours. In the interval between the spells the patient was quite well, except that she was somewhat mentally depressed with the certain knowledge that at the end of five or six weeks she was sure to have "another spell." On September 18, 1893, three days after a very severe "spell," she came to my office for the first time. At this visit I obtained her previous history, and I prescribed phosphate of soda, in teaspoonful doses after each meal. The next day I examined her urine and found no albumin, sugar, or casts.

On January 14, 1894, the attacks had continued at intervals of from three to six weeks, but I had not been fortunate enough until this day to witness one of these attacks. On this day she had two attacks, the first one mild, the second one severe. I saw her in the second. The first attack was at 8 in the morning, and occurred as usual without warning. It lasted from twenty to thirty minutes, and she had just regained consciousness when I reached the house. At this time she was restless, somewhat confused in mind, and complained of pain in the left shoulder; the

respiration was normal, the pulse 90, strong and regular. By this time I knew enough of the case to suspect that this mild attack would be followed by another and more severe during the day. I therefore arranged matters so that I could reach the patient within a few minutes should she have another attack during the day. At 7 P.M. the second attack occurred, and I had the good fortune to be present. This attack came on while the patient was in bed. She had remained in bed all day as a precautionary measure against a second attack, and all day she had seemed as well as usual, even up to the moment of her second attack. In the beginning of the attack the attention of the family was attracted by her peculiar, noisy breathing. She became unconscious at once, and her breathing very *labored*, her lips blue, the face congested; the arms and legs were straightened and stiffened, and remained rigid for eight or ten minutes, and then became relaxed and remained so during the remainder of the attack; the congestion of the face soon passed off, and the lips became red again, but the heavy, noisy, irregular breathing continued for twenty or twenty-five minutes, and did not become quiet and regular till just before the patient regained consciousness. The pulse in the beginning of the attack was strong, regular, and about 85 or 90 per minute; it gradually increased in frequency until at the close of the attack, which lasted forty minutes, it was 120 per minute; all the time, however, it was strong and regular. After the attack the pulse gradually returned to the normal. The pupils were the same on both sides; they reacted to light and were contracted till near the close of the attack, when they became normal. There were no muscular twitchings except in her right upper eyelid, and here they occurred for a short time only during the most severe part of the paroxysm. After the heavy breathing subsided the woman lay for about ten minutes apparently in a normal sleep; she then began to move, opened her eyes, was much confused, and was not able to understand what had happened to her. She was now very restless, complained of pain in her left shoulder and wished to be moved frequently; she also complained of being sick at the stomach (this has been a common symptom in her recent attacks, but she has never vomited in any of them). About one hour later she went to sleep and slept the greater portion of the night. The next day she did not feel sick, but remained in bed, and on the second day she was up and about as usual.

This attack was "just like all of her previous spells," and as for a special purpose I have described this attack in detail, I would call particular attention to the following points, which were characteristic of all her attacks:

1. Sudden onset of attack, no warning.
2. Muscles rigid, but not convulsed.
3. Labored, gasping, irregular breathing.
4. Unconsciousness from beginning to end of the attack.
5. Heart-action rapid, but regular and strong.

In the study of this case it seemed to me that the peculiar attacks described had taken the place of the sick headaches of former years, and were therefore possibly of like origin. The case seemed to me to correspond in every particular to that class of cases which Alexander Haig[1] describes as being due to that very indefinite condition "the uric-acid diathesis." My patient was stout, inactive, a great meat-eater, had suffered from sick-headache all her life till these headaches were substituted by the explosive attacks described. Surely this was a typical "uric-acid case," and I decided to put her on the treatment recommened by Haig. I asked her to stop eating meat, to eat sparingly of eggs, and to take no wine or malt liquors. All other food, such as milk, bread, and all kinds of fruit and vegetables she might have *ad libitum*. The medical treatment consisted of a dose of Carlsbad salts each morning and 5 grains of piperazin three times a day. I placed her upon this treatment, not because I believed her symptoms due to "uricemia," but because whatever might be the cause of the symptoms, I hoped to get the same good results from treatment that Haig had reported. I also directed that all the urine should be saved and sent each morning to Mr. Otto F. Bange, a competent chemist, who very kindly took great interest in making a quantitative estimate of the urea and uric acid in this urine from day to day.

On February 25th the woman had two attacks, one mild and one very severe. I again had the good fortune to witness one of these attacks, and it was quite as severe as and in every way similar to the attack described. The treatment as outlined had been faithfully carried out, and the piperazin had been given a fair trial without apparent influence in either warding off or in modifying the severity of the attacks. The influence of the piperazin on the excretion of urea and uric acid is shown in the following table. In all of these examinations the specimen of urine examined was a part of the whole twenty-four hours' urine, except in the examinations made on the 24th, 25th, and 26th of February. The amount is calculated to 1000 c.c. of urine, which was the average amount passed by this patient in twenty-four hours.

From following table one sees that the amount of uric acid was somewhat increased during the first ten days of the treatment, and was somewhat diminished during the last days of the treatment. But the increased excretion of uric acid under this treatment did not in any way influence the frequency or severity of the attacks. I would call special attention to the amounts of urea and uric acid in the specimens of urine examined on the 25th and 26th of February, just before and just after the severe attacks of February 25th.

Urine, February 25th, 6 A.M. Just before attack, urea, 6.00; uric acid, 0.25.

[1] "Uric Acid."

Urine, February 25th, 9 A.M. Just after first attack, urea, 7.00; uric acid, 0.55.

Urine, February 25th, 5 P.M. Just before second attack, urea, 8.00; uric acid, 0.40.

Urine, February 26th, 9 P.M. Just after second attack, urea, 5.00; uric acid, 0.15.

Urine, February 26th, 8 A.M. Next morning after attack, urea 12.00; uric acid, 0.25.

Date.	Urea in 24 hours.	Uric acid in 24 hours.	Medicine.
January 19	12.23	0.57	Piperazin
" 20	13.10	0 55	15 grains.
" 21	10.23	0.35	"
" 22	14.00	0.50	"
" 23	15.00	0.65	"
" 24			
" 25	14.00	0.65	"
" 26	13.50	0.53	"
" 27	12.50	0.50	"
" 28	15.00	0.67	"
" 29	13 9	0.82	"
" 30	14.25	0.45	"
February 1	10.00	0.25	"
" 2	12.00	0.36	"
" 3	9.00	0.30	"
" 4	8.00	0.40	"
" 5	9.00	0.36	"
" 6	10.00	0.50	"
" 7	14.00	0.50	"
" 11	10.00	0.25	"
" 13	12 00	0.35	"
" 15	11.00	0.33	"
" 16	10.00	0.25	"
" 25, 6 A.M.	6.00	0.25	"
" 25, 9 A.M.	7.00	0.55	"
" 25, 5 P.M.	8.00	0.40	"
" 25, 9 P.M.	5.00	0.15	"
" 26, 8 A.M.	12.00	0.25	"

The study of these figures is of considerable interest, as they clearly show that the excretion of urea is diminished and the excretion of uric acid increased during these attacks. The proportion of uric acid to urea is therefore greatly increased. Haig believes that the symptoms in just such cases as this may be explained upon the hypothesis that the uric acid occurs in excess in the blood and causes these symptoms by its action on the nervous centers, and that with the rapid elimination of the uric acid the blood is relieved of this excess and the symptoms subside. But Haig's hypothesis seems to me quite inadequate to explain the symptoms in the case reported, for the simple reason that *uric acid* and *its compounds are non-toxic.*

Bouchard[1] injected "experimentally into the blood thirty centigrams of uric acid for each kilogram of the animal without apparent accident." In one instance he injected sixty-four centigrams for each kilogram without injury to the animal. When death did occur, following excessive quantities of uric acid, he was convinced by his observations that death was alone due to the excess of the vehicle. Roberts[2] says that "uric acid and its compounds are deleterious simply because of their sparing solubility in the bodily media." As all experimental evidence is opposed to the idea that uric acid could produce such a group of symptoms as were presented in this case, I was impelled to search elsewhere for the cause of these attacks, and in doing so I was led to inquire into the possibility of leukomain-poisoning as a cause of the nervous paroxysms. The reasons that determined the research, in spite of the fact that the uric acid leukomains had been found in normal and many pathologic urines, in such very minute quantities as to make it highly improbable that they could enter as etiologic factors in the production of disease, were as follows:

1. In this case there was an increase in the excretion of uric acid during the attack, and Haig[1] has shown that this increased excretion of uric acid is a constant accompaniment of certain forms of sick-headache and epileptoid attacks. It therefore seemed possible that along with the increased excretion of uric acid there might be an increased excretion of uric-acid leukomains, as these bodies belong to the same chemical group and are probably formed by the same or a like metabolism.

2. It seemed altogether possible that a perverted metabolism or a defective elimination might result in these leukomains being present in the blood in abnormal quantities not at all indicated by the amount of uric acid excreted.

3. Paraxanthin, the most poisonous leukomain of the group, when injected into mice, produces symptoms much like the epileptoid attacks which this patient has. According to Salomon,[2] it produces dyspnea and rigor mortis, or stiffening of the muscles.

For the foregoing reasons I thought it worth while to inquire whether or not paraxanthin was excreted in excess in the urine during these attacks. It was decided to make the experiment as clean as possible by separating from the urine only the paraxanthin; the other xanthin compounds, some of which are poisonous, were gotten rid of.

The eight liters of urine used for the investigation were passed just before, during, and following the severe attack of the 25th of February. Boric acid was added to the urine while it stood, to prevent fermentation. This urine was delivered to Mr. Otto Bange, the chemist, with the request that he would abstract from it the paraxanthin it contained; but as this process is tedious, requiring some weeks for its completion, the patient was in the meantime looked after in the following manner: The piperazin and Carlsbad salts were discontinued, and the patient was advised to continue the same diet, ab-

[1] "Auto-intoxication in Disease," 1894.

[2] "Uric Acid, Gravel and Gout," 1892.

[1] "Uric Acid."

[2] Ber. d. Chem. Gesellsch., 1878, 1883, and 1888; Archiv f. Physiol., 1882, 1884; Zeitschr. f. klin. Med., 1884; Zeitschr. f. Physiol. Chem., 1887, 1889; Arch. f. Anat. u. Physiol., 1878, 1887; Verhandlung d. Phys. Gesellsch. zu Berlin, 1880–81.

staining from meat as before, and to take a teaspoonful of phosphate of sodium in a cup of hot water each morning, and ten grains of salicylate of sodium three times a day; this treatment was continued for one week. During the second week only two ten-grain doses of salicylate of sodium were given each day. During the third week only one dose per day was given, and during the fourth week no medicine was given except sodium phosphate. After this the patient again took two ten-grain doses of the salicylate per day.

On April 4th the woman had another attack, but it was not nearly so severe as those of five weeks before. Below is given a table showing the amounts of urea and uric acid excreted from day to day during the preceding three weeks:

(The amount is calculated to 1000 c.c. of urine, the average amount excreted in one day.)

Date.	Urea in 24 hrs.	Uric acid in 24 hrs.	Medicine, per day.
March 8	14.00	0.60	Acid sal., 30 grains.
" 9	11.00	0.35	" 30 "
" 10	10.00	0.25	" 30 "
" 11			" 30 "
" 12	9.00	0.35	" 30 "
" 13	7.00	0 23	" 30 "
" 14	6.00	0 25	" 20 "
" 15	7.00	0.40	" 20 "
" 16	8.00	0.20	" 20 "
" 17	6 00	0.10	" 20 "
" 18	9.00	0.12	" 20 "
" 19			" 20 "
" 20	7.00	0.20	" 10 "
" 21	6.00	0.25	" 10 "
" 22	11.00	0.40	" 10 "
" 23			" 10 "
" 24			" 10 "
" 25	7.00	0.10	" 10 "
" 26	8.00	0.15	no med.
" 27	7.50	0 23	"
" 28	10.50	0.40	"
" 29	9.50	0.36	"
" 30	9.00	0.28	"
" 31	8.00	0.34	"
April 1	6.50	0.14	Acid sal., 20 grains.
" 2	7.50	0.15	" 20 "

It will be seen from this table and the previous one that the no-meat-diet very greatly diminished the amount of urea excreted. With the exception of occasional variations the amounts of urea in the urine progressively diminished after the patient, three months previously, had been advised to approach as nearly as practicable to a vegetable diet. The amount of uric acid in the urine also during this time progressively diminished. This was no doubt in part due to the action of the medicine, and it is also a noticeable fact that the amount of uric acid excreted fell more rapidly under the salicylate of soda than under the piperazin treatment. The patient was again advised to continue the same diet, and also to continue the sodium salicylate, ten grains twice a day, with a dose of Carlsbad salts each morning.

On April 25th the patient had one light attack, which was less severe than the one three weeks before.

On April 27th, the woman had recovered quickly from the slight attack on the 25th, and was as well as usual. It was the opinion of all who have observed the patient during the past few months that she was now better than she was four months before; the attacks were comparatively mild compared to what they were then. It seemed, therefore, altogether probable that she had been improved by the treatment.

With this history of the case we can now return to the study of the etiology of these attacks, and to the inquiry whether or not this patient has an excess of paraxanthin in her urine, and, if so, could paraxanthin-poisoning account for the symptoms in her case?

Let us first inquire what is paraxanthin. Paraxanthin is one of the poisonous leukomains of the uric-acid group, and of all this group it is the most poisonous. According to Salomon, who was the first to isolate this substance, its physiologic action is as follows: In mice the reflexes are increased to a tetanus, followed by a rigor-mortis-like contraction of the muscles, and dyspnea is a constant symptom. The formula for paraxanthin is $C_7H_8N_4O_2$. It is a noticeable fact that paraxanthin, xanthin, and gerontin, the most poisonous leukomains of this group, all have two atoms of O, while uric acid ($C_5H_4N_4O_3$) has three atoms of O. Uric acid, it would seem, is therefore a more highly oxidized body than these poisonous leukomains.

Salomon also found that paraxanthin occurred in normal urine in such minute quantities that its poisonous properties were lost in dilution. From 1200 liters of normal urine he obtained only 1.2 grams—that is, one milligram of paraxanthin for every liter of urine. It would, therefore, take one-half a liter of urine to yield one-half a milligram of paraxanthin, which is the poisonous dose for mice.

From the 8 liters of urine previously spoken of, Mr. O. F. Bange isolated the paraxanthin by the method of Salkowski and Salomon.[1]

[1] The method in brief is as follows:

Method.—The phosphates are precipitated with ammonium hydrate; after twenty-four hours the urine is filtered or decanted from the precipitate, and a 3 per cent. solution of nitrate of silver is added to it, about 0.5 or 0.6 of silver being used for each 1000 c.c. of urine. It is, as a rule, necessary to add more ammonia to hasten precipitation; after precipitation the precipitate is washed six or eight times with distilled water by decantation; the silver compounds suspended in water are then decomposed with hydrogen sulphid, the current of H_2S is made to pass through the water in which the compounds are suspended for hours; the liquid is now decanted or filtered to separate it from the precipitate, and evaporated down to about 1000 c.c. if 6000 c.c. of urine have been used; the remaining uric acid is thereby separated; this liquid being filtered, ammonia is again added; after twenty-four hours it is again filtered and precipitated with silver nitrate, the silver being added as long as precipitation occurs; the supernatant liquid is removed by decantation, and the precipitate is transferred to a filter and allowed to stand for twenty-four hours in a dark place. It is then dissolved in hot nitric acid of 1.1 specific

By this method there was obtained 8 c.c. of a very concentrated solution of paraxanthin. From a drop of this solution on a glass slide characteristic paraxanthin-plates and needles crystallized out, and a drop of the solution in a solution of potassium hydrate gave the white precipitate which is characteristic of paraxanthin.

The effect of this solution on mice was next studied, mice being chosen for the experiment because they were known to be susceptible to paraxanthin poisoning, and because they were inexpensive and easily obtained.

The first experiment, on April 12, 1894, was with a full-grown house-mouse. *Time*, 5.35 P.M. Two minims of the solution were injected into the peritoneal cavity; after thirty seconds the mouse was very nervous, trembling, jerking when the sides of the can in which it was held were touched; this excitability increased almost to a tetanus, when, at the expiration of two minutes, the mouse jumped into the air and fell on its side, and after a few convulsive movements stiffened and died. The post-mortem examination showed no evidence of a needle-wound in the peritoneal cavity.

In this experiment the dose was so large that the paraxanthin proved so rapidly fatal that opportunity was not given to study the symptoms. For this reason I decided that in the next experiment I would introduce as small an amount of the solution as possible, and surely not more than one minim was used.

The second experiment was at 5.45 P.M. One minim of the same paraxanthin-solution was introduced into the peritoneal cavity of a full-grown, gray mouse. At 5.48 P.M. the mouse was very nervous, jumped spasmodically when the sides of the tin-can were touched; this reflex excitability continued until it was almost a tetanus. At 5.50 the mouse fell in convulsive movement, and almost immediately stiffened in a clonic tetanic contraction of all the muscles. This muscular tension was kept up almost uninterruptedly for three hours, when the mouse died. Toward the close of this period the muscles were relaxed, except at the onset of the attack there was no movement resembling a convulsive movement. From the beginning to the end of the attack there was dyspnea and a gasping respiration, which after a time was irregular. The heart's action was regular and apparently not affected by the poison.

By these, and many other experiments of which they are a type, it was proved that the substance separated from the urine, which responded to the chemical tests for paraxanthin, also when injected into mice produced the physiologic effects of paraxanthin.

The symptoms which are most characteristic of poisoning by this substance in the mouse are:

1. Nervousness, extreme reflex excitability—almost a tetanus.

2. Clonic, tetanic stiffening of the muscles, followed by muscular relaxation. (Convulsive movements usually absent.)

3. Dyspnea, orthopnea, asphyxia. The gasping respiration is probably the most characteristic symptom.

4. Heart unaffected.

According to Salomon one-half of a milligram will produce these symptoms in a mouse. As one minim of the 8 c.c. of concentrated solution of paraxanthin obtained from 8 liters of urine produced these symptoms, it is reasonable to conclude that this one minim contained one-half a milligram of paraxanthin, and that the 8 c.c., or 120 minims of solution contained 60 milligrams of the solution. As only one milligram of paraxanthin is found in one liter of urine, in the 8 liters of urine from this case the paraxanthin was increased as 60 to 8, or nearly eight times. From another specimen of urine, 8 liters, the paraxanthin was separated and evaporated to 8 c. c. That this solution contained paraxanthin was demonstrated by the chemical tests, and that it contained paraxanthin in very small quantities was shown by the experiment that 10 minims of the solution injected into the peritoneal cavity of a mouse did not produce the symptoms of paraxanthin-poisoning.

Upon the foregoing evidence I conclude that paraxanthin occurs in great excess in the urine passed by this patient during the epileptoid attacks already described, and that it is reasonable to believe that paraxanthin-poisoning is a potent factor in the production of these attacks.

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gravity to separate the hypoxanthin. If working with 4 liters of urine, from 60 to 70 c.c. of acid will be sufficient. After two hours, filter and carefully add ammonium hydrate to neutralization, and for the third time xanthin and paraxanthin are separated, the precipitate washed, suspended in water, and again decomposed with hydrogen sulphid. It is filtered while hot, and the filtrate evaporated to 50 c.c. and a little ammonium hydrate is added, and after twenty-four hours the last traces of phosphates and oxalates will be precipitated; the filtrate is again evaporated on a sand bath, and when the liquid begins to get turbid evaporation is suspended; the next day the xanthin will be found in a mass at the bottom of the beaker; filter the liquid and evaporate to a few c.c. —from 10 to 20—and one has a concentrated solution of paraxanthin. If the solution be very concentrated, paraxanthin will crystallize out.

The Ohio State Medical Society, at its last meeting, held recently, elected the following officers for the ensuing year: President, D. N. Kinsman, M.D., Columbus; First Vice-President, C. O. Probst, M.D., Columbus; Second Vice-President, M. Stamm, M.D., Fremont; Third Vice-President, J. C. Buckner, M.D., Cincinnati; Fourth Vice-President, Robert Peter, M.D., Canal Dover; Secretary, Thomas Hubbard, M.D., Toledo; Assistant Secretary, Charles Graefe, M.D., Sandusky; Treasurer, James A. Duncan, M.D., Toledo. The next meeting is to be held at Columbus, May 15, 1895.

ACUTE APPENDICITIS.

By JOHN B. DEAVER, M.D.,
of Philadelphia.

With Remarks in Opening the Discussion.

By J. M. Da COSTA, M.D.

(Continued from p. 540.)

PROGNOSIS.

The prognosis of appendicitis depends not only upon the character of the attack and the complications which may supervene, but upon the character of the treatment instituted.

Our present knowledge gives early operation the first place in the treatment. Many cases of simple catarrhal appendicitis subside under careful and rational medical supervision; still, in the great majority, this primary attack only leaves the patient predisposed to another which is more severe and more dangerous than the original one. In my last series of cases, forty-five of which I have operated upon, forty-two had had previous attacks. In other cases which start up acutely there is over the diseased organ a gradual decrease in all the symptoms excepting tenderness, thus leaving the patient in a subacute condition. In this subacute condition the appendix may, and frequently does, go on to perforation and gangrene, without a corresponding increase in the symptoms. When the appendix has been removed a second attack is an impossibility, so that I believe that operation gives the patient the only chance for permanent recovery.

When the collection of pus is circumscribed, the general peritoneal cavity being walled off, the prognosis is generally favorable. If the general peritoneal cavity be early infected the prognosis is grave, although if operation be at once resorted to there is a possible chance of recovery; while if the infection be late or operation deferred, a fatal termination is invariably the rule. When a circumscribed appendiceal abscess ruptures and evacuates its contents into the bowel, recovery usually follows, while evacuation into the bladder is fatal in about 50 per cent. of the cases. The age of the patient is a decided factor in the prognosis, as the disease is more fatal in the very young, on account of the lessened powers of resistance.

COMPLICATIONS AND SEQUELÆ.

By far the most important and frequent complication of appendicitis is peritonitis. Inflammation or phlebitis of the right iliac vein, or thrombosis associated with edema of the corresponding lower extremity, is a complication sometimes met with in the localized suppurative variety of appendicitis, and if a fragment of the thrombus be carried along the general circulation, this may result in foci of septic pneumonia or septicemia.

If the appendix lies over the iliac bloodvessels, and undergoes ulcerative destruction, it may cause necrotic change in the walls of the bloodvessels, and result in fatal hemorrhage. Abscess of the liver, purulent collections in the pleura and pericardium, may also result from portal thrombosis or directly from the general circulation. Appendicitis may be a complication or an accompaniment of hernia. When a localized appendiceal abscess ruptures into the bowel or into the bladder, there is renewed infection from these avenues. Fecal fistula is a frequent sequel of appendicitis.

TREATMENT.

I have made no attempt to formulate a rule by which we are able to discriminate which class of cases will terminate as simple appendicitis, or go on to perforation or gangrene. There are some who claim to be able to foresee which cases of appendicitis will eventuate in recovery or assume the gangrenous type, or to recognize the onset of this dangerous complication. This is, I believe, an assumption which cannot be substantiated by experience. My experience is that the surgeon is called in so often to see cases in which the unfortunate patient, according to the attending physician's statement, has been doing well up to a few hours previously, only to find the evidences of general septic peritonitis, which invariably foretells the almost inevitable result. Is it to share the responsibility? Certainly not with the hope that operation promises recovery. Again, why should we trust to chance when we have positive means of relief in immediate operation, if the treatment to which I shall refer further on fail to accomplish the desired end? Granting that the majority of the cases of simple appendicitis will temporarily recover under careful and well-directed medical treatment, are we justified in allowing the minority to perish when we have positive means at our disposal to prevent the fatal issue?

The physician who has had the opportunity to observe many cases of appendicitis cannot but have impressed upon his mind the lesson of cause and effect—the cause being the primary attack, the effect the death from a subsequent attack.

While some may claim that they have never seen a recurrence, there are many who will bear witness to the fact that they have frequently seen subsequent attacks. My friend, Dr. J. M. Da Costa, recently related to me the history of a case in which the patient had had forty-seven previous attacks; in the forty-eighth attack he asked the surgeon who was in attendance with him to operate. The operation not only terminated favorably, but demonstrated the presence of a collection of pus within the appendix which was on the verge of rupture.

When advising operation I have been met by the statement from the attending physicians that they have seen patients recover from several recurrent attacks, and presenting this as an argument against operation. The patient just referred to, who had forty-eight attacks, certainly demonstrates to the unprejudiced mind that one more attack would most likely have resulted in rupture and septic peritonitis.

While this paper is upon the subject of "Acute Appendicitis," I may be permitted to digress to make the statement that of the thirty cases of chronic appendicitis upon which I have operated successfully this winter, the lesions present in the majority of the appendices demonstrated most clearly that an acute attack would most probably have resulted disastrously.

If operation is justifiable in the minority of cases, which without operation are fatal, is it not equally justifiable in all cases, considering that the majority which recover under well-directed medical treatment suffer subsequently from recurrent attacks, and many perish in the last attack?

In my experience operation, performed under strict aseptic precautions by a surgeon familiar with the anatomy and the technique of the abdominal cavity, and immediately following the establishment of the diagnosis, will give a mortality practically *nil*.

If the medical man had the same opportunity to observe the ravages of an appendiceal inflammation ante-mortem, as has the surgeon, particularly those who have operated many times, he would certainly be convinced of the importance of early operation; hence, I can understand the position of the conservative physician.

I will ask in advance those who will take exception to early operation, if they have ever had the opportunity to observe the treatment I advocate. Anyone who has seen a gangrenous appendix removed before perforation, and before a localized abscess or a general septic peritonitis has developed, could not fail to sanction prompt interference.

The first indication to be fulfilled in a case of simple appendicitis, or even of a supposed case, is to obtain free action of the bowels. This is best accomplished by the administration of castor-oil, followed by salines, preferably Rochelle salts, or, if the stomach is not tolerant to salines, small doses of calomel. Free evacuation of the bowels—not drastic purgation—serves the purpose of clearing the alimentary canal of all foreign and irritating substances, such as particles of undigested food, etc., and relieves the congested bloodvessels, thus modifying the degree of the subsequent inflammation. Again, this course fulfils a most important indication in having the bowels in the most favorable condition for operation in the event of its necessity. I cannot emphasize the importance of this part of the treatment too strongly, as upon it, I believe, largely depends the chance of the patient's recovery. Certainly in my experience, the bulk of patients I have seen recover without operation have been those in whom this was most thoroughly carried out, and in the cases operated upon the largest percentage of recoveries have been those in whom the bowels were not allowed to be confined. The pain in appendicitis, which is colicky in nature, is due first to the muscular contraction of the appendix and the bowels, and in the majority of instances is provoked by irritation within both; therefore, is not the emptying of the intestines of their irritating contents urgently called for? Is not the bowel, in other words, asking to be relieved? This being so, will not purgatives take the place of an anodyne, a hypodermatic of morphin, which is often and indiscreetly given? The best anodyne consists in repeated doses of salts or calomel, which do more than any preparation of opium can do, both relieving and removing the cause of the pain. Free purgation should be continued throughout the attack, sufficient to keep the contents of the bowels in a liquid state as long as the tenderness and uneasiness in the appendix exists.

Absolute rest in bed, with careful feeding, should be enforced. Turpentine in the form of hot stupes should be applied, and will relieve the distention and pain in addition to acting as counter-irritants. The use of leeches and blisters is advocated by many in preference to purgation, to accomplish the depletion of the circulation. This is not in accord with my experience. Blisters are particularly objectionable, in that they macerate the superficial layer of the integument, increase the patient's discomfort, do not accomplish the results afforded by salines or calomel judiciously administered, and, one of the strongest objections against their use, they make a septic field for operation. This latter is also true of leeches.

Opium should not be given; it usually masks the character of some of the most important symptoms. Absolute rest in bed, with careful feeding and mild purgatives, generally relieve these cases within thirty-six or forty-eight hours. In those cases in which the symptoms do not abate, and the disease seems to be progressive, the appendix should be removed. When opium has been administered and the progressive character of the case is doubtful, it is better to err upon the side of safety, and remove the appendix at once. The condition present is usually beyond the powers of Nature to remedy, while in the hands of a surgeon who pays strict attention to the aseptic details of the operation the latter entails little risk to life—less than that which is involved

in even a mild attack of appendicitis that remains stationary, with all its possibilities of lymphangitis, infection of the peritoneal cavity, retained mucopus within the appendix, and rupture of the latter into an unprotected peritoneal cavity, or ulceration and perforation from inspissated fecal matter, imprisoned by constriction within the cavity of the appendix, or from a gangrenous condition alone.

When the disease has gone on to a stage of pus-formation, and we are positive that such a condition exists, usually shown by persistent pain and tenderness which is intense on deep pressure, no time should be lost in opening the abdominal cavity, evacuating the pus, and removing the appendix at the same time. The less medication these cases receive the better, and the use of salines is especially contra-indicated. The limiting wall of the abscess-cavity is delicate, and the increased peristalsis set up by the saline may be sufficient to rupture the abscess-wall, with resultant leakage of its contents into the peritoneal cavity and subsequent peritonitis.

In all cases in which the disease is not of a mild type at the outset, as indicated by the symptoms, I believe that operation is the only treatment offering any positive means of relief, and that it should be instituted as soon as the diagnosis is established. Salines, and this is more true of opium, are especially contra-indicated in this class of cases, in which there is no certainty as to the condition of the appendix at its attachment to the cecum.

Rectal injections are contra-indicated for the same reason. I have recently seen a case in which a gangrenous appendix was forced away from its attachment to the cecum by a copius injection which was emptied into the abdominal cavity, followed in a few hours by a septic peritonitis. Prior to the injection the patient's abdomen was flat, the temperature normal, and the pulse good.

Great care should be exercised when opening these abscess-cavities or infected areas that the general peritoneal cavity be not infected. The manipulation should be very gentle, as a communication may readily be established. With a good assistant, who with gauze compresses is able to keep the field of operation well isolated from the rest of the peritoneal cavity, and also to keep the small intestines out of the way, the operation at this period of localized peritonitis, with or without sero-purulent collections, is both safe and advisable. It is almost impossible to avoid breaking away some of the adhesions, but with care the appendix can be removed without infecting the peritoneal cavity. After removal the general peritoneal cavity can be sealed off by properly packing with iodoform-gauze previously sterilized.

When the appendix has been separated from the cecum at its basal attachment by a gangrenous inflammation, if the opening in the cecum is not too large and the surrounding area not devitalized, the margins of the openings should be cut away and the opening closed by the Lembert suture. On the other hand, if the opening be large, and the adjacent area is involved in this gangrenous process, it is better to wall off this portion of the cecum, insert a glass drainage-tube into the abscess-cavity, and pack iodoform-gauze around it, thus sealing it off from the peritoneal cavity. A fecal fistula will almost always follow, but this usually closes spontaneously. I have known cases, after the abscess-cavity has simply been opened and drained, to recover with a fecal fistula, the fistulous tract communicating with the tip end of a patulous appendix. This demonstrates the importance of removing the appendix when the abscess-cavity is opened.

When the abscess-cavity is postcolic, the incision should be made through the outer layer of the ascending mesocolon, the appendix removed, and aseptic drainage established through the loin. In the postcecal appendiceal abscess, especially if the appendix be the seat of gangrene, there is great danger of infection of the liver through the venules of the portal system which are in relation with the main layer of the ascending mesocolon. When the appendix runs over the brim of the pelvis and extends into the pelvic cavity, it is always better to drain with a glass drainage-tube, placed in the most dependent portion of the pelvis. In case a secondary abscess should form and occupy the recto-vesical space in the male, it is better to drain it through the rectum, using a larger trocar and canula to penetrate it, and then insert an English catheter through the canula, while if it occupy the recto-uterine space, it should be emptied through the vagina. I think it is better to resort to this procedure than to reopen the original wound or open through the linea alba, on account of exposing the peritoneum to a second infection.

I have not been able to see the advantage of the linea alba as an avenue through which to remove the appendix, as advised by some operators.

From the fact that the appendix in its normal position lies in the right iliac fossa, the most direct route to it is through the right semilunar line or immediately to either side of it. By carrying the incision either through the rectus or the internal oblique and transversalis muscles, there is no doubt that the wound can be closed with greater security against the occurrence of a hernia, whether a series of buried sutures be used or not.

There is no question but that the Trendelenburg position offers advantages in certain cases, and that the evacuation of pus or drainage of an abscess, and the subsequent irrigation, are favored by turning the patient over on the affected side.

It has been my intention not to cite any of the numerous cases I have records of, knowing how tiresome this is to an audience, but while writing upon the treatment of this paper I was called to see a case which so clearly supports the position I hold relative to early operation, that I will beg of the Fellows the privilege of reporting it.

Friday night, April 27, 1894, Dr. Prendergast was summoned to see Mrs. O., thirty-five years of age, who on account of acute abdominal pain, accompanied by nausea, general abdominal tenderness, and constipation, was suddenly taken to her bed. The pain was so severe as, in Dr. Prendegrast's opinion, to call for a hypodermatic of morphin. Upon careful inquiry a history of one similar attack, much less severe in character and occurring four months ago, was obtained. On the following day, Saturday, the bowels having been moved by purgatives, the patient thought herself to be more comfortable. On Sunday the pain was more severe and was referred to the right iliac fossa; there was pronounced general abdominal tenderness with decided tympanites; the pulse was 100; the temperature 102°. The patient was referred to me for admission to the German Hospital. Upon being given a statement of the case over the telephone, I requested the patient to be prepared for operation. The examination of the pelvis was negative. Examination of the abdomen showed very evident general peritonitis, and excessive tenderness to pressure over the site of the appendix. Operation demonstrated a small peri-appendicular abscess; an appendix which held a southwest position, turned upward and outward upon itself, gangrenous at its distal extremity to the extent of an inch, and adherent to the floor of the right iliac fossa by its tip. The mesentery of the appendix was so infiltrated and thickened as to resemble a second appendix. The general peritoneal cavity was not shut off. The pus was evacuated, followed by irrigation and removal of the appendix. The morning after the operation the temperature was 98° and the pulse 84. The patient was passing wind and the abdominal distention was rapidly disappearing. On Tuesday morning the improvement continued. On Wednesday the pulse was 68, the temperature normal, and the bowels moved the previous night. The abdomen was flat and improvement was uninterrupted.

In opening the discussion, DR. J. M. DA COSTA said: I rise with some diffidence to speak on a subject of this kind; it is so largely surgical, and so many distinguished surgeons are present, that I am aware that I am addressing an audience of experts. But though the condition is undoubtedly in the main a surgical one, before the case gets into the hands of the surgeon the physician sees it, and to him as well as to the surgeon belongs the responsibility of declining operation or of urging operation. I shall not take up time by going into the discussion of the whole subject, but merely speak of some matters that experience has made clear to me; an experience shared in many instances with noted surgeons, but of which I may summarize the results from a general and purely medical point of view.

In the first place, there is the question of diagnosis, which, after all, belongs more to the physician, as he sees the case early, and he has to decide whether or not it is one of appendicitis. I want to say distinctly that with what Dr. Deaver has so clearly stated of the valuelessness of the thermometer in the recognition of gangrenous or purulent appendicitis, I am in accord. I could cite examples of gangrenous appendicitis, with pus around the appendix, in which the temperature was almost normal. In one instance which I saw with Dr. Morton, gangrene of the whole appendix was found, but at no time did the temperature go above 99.1°. I should also like to say that while the thermometer does not help us, the pulse does not do so much more, and that, after all, it is by the whole history, and particularly by the kind of pain, that we make up our minds as to what is the matter; I was almost going to say by the locality of the pain, but this is true only up to a certain point. In one of the most striking cases with which I was ever connected the pain was over the liver. It is sometimes epigastric; in the case that I saw with Dr. Deaver the pain was on the left side, and most puzzling it was to determine this to be an instance of appendicitis. Looking at the admirable paper of Dr. Fitz, I find that pain in the left iliac fossa occurs in only 1 per cent. of the cases. There is one seat of pain rarer, namely, pain in the hip and groin, which is so rare that it happens in only ½ of 1 per cent. The seat of pain, therefore, must not mislead us. It need not be in the right iliac fossa.

Another question in diagnosis is as to the presence of pus. If we only had a sure test indicating the presence of pus in appendicitis, it would be a most valuable addition to the whole subject; but we have not. I have already said that the thermometer does not help us. The sense of resistance and the fulness are of some value; so is severity of recurring pain. But the great tenderness that exists in cases in which pus is present is, perhaps, the most certain sign; yet it is not an absolute sign. In rectal examination with the view of detecting a swelling, I have been disappointed except when there is a considerable collection of purulent material. If I were asked what single sign is there of pus in appendicitis, I should say that the only thing, barring the marked tenderness, that comes near being a distinctive sign is the great variability of the symptoms. You will find the pulse up, then down; the respiration embarrassed at one visit, less so at another; there will be peculiar fleeting eruptions on the skin; there may be coarse capillary injection here and there. These signs, which show a septic condition, are probably the most certain, although, after all, not very certain, signs of purulent collection.

Looking to some questions of special diagnosis, typhoid fever is of a great deal of interest. One of the most remarkable instances that I ever saw was one Dr. Morton and I had together, in which there had been a previous attack of appendicitis, Dr. Morton having attended the man through it. The pain was localized in the right iliac fossa, and strongly pointed to a recurrence of the previous malady, but the temperature was 104°, and in both of our experiences this was so unusual in appendicitis that the case was allowed to go on from day to day without surgical interference, and at the end of the

sixth day lenticular spots appeared on the abdomen, the bowels became loose, and the case ran the course of typhoid fever. Here the height of temperature was so great that, notwithstanding a clear knowledge of the history, Dr. Morton most judiciously held his hand. Of course, this difficulty will not arise when we have the temperature-chart and can trace the characteristic rise of typhoid fever. But we are often not called in at the onset, and we have to judge of the case as it stands. I would state that early height of temperature, a temperature remaining above 102°, would be an important point against appendicitis and in favor of typhoid fever. On the other hand, severe and recurring pain in the right iliac fossa is against this. With regard to the spots which have been stated to exist in appendicitis, and which are supposed to indicate pus, these do not have bearing on the question of differential diagnosis. They are not the characteristic eruption. They are not rose-colored spots of definite life; they are coarser, irregular, and very fleeting.

The question of diagnosis with reference to obstruction of the bowels, as I know by experience, is sometimes very difficult; it seems almost impossible to solve the question. Every single symptom, including scanty urination, that exists in appendicitis may be present. Generally, however, the absence of fever early in the case, the markedly distended and tympanitic abdomen, the obstinate constipation, the diffuse rather than localized pain, its lesser violence, distinguish the intestinal obstruction.

I turn from these points of diagnosis to some points of treatment. It would be out of place here to go into a full discussion of the medical treatment of acute appendicitis. I will only state that in the main I agree with the doctrine that free purgation is advantageous, and that the use of opium should be very moderate and ought to be avoided, certainly early in the case, if the pain will permit us to do so. There is a remedy which, in the early stages, I have known to be of advantage—the application of ice over the region of the appendix. If time permitted, I could give the detailed history of several cases in which the symptoms of acute appendicitis disappeared under this treatment. However, I pass on to the important point where surgery and medicine touch—the question of operation. While we have to defer most largely to the judgment, to the skill, and to the acquired knowledge of the surgeon, nevertheless the physician for his part also comes to certain definite conclusions. I cannot go as far as Dr. Deaver in thinking that every case of appendicitis had better be operated on. It seems to me that if we take this view, a person with appendicitis will go to bed not with the proverbial sword of Damocles suspended over his head, but with the scalpel of the surgeon already on his abdominal wall. I believe that the majority of cases of appendicitis in the first attack recover under medical treatment. This is certainly true when no perforation has happened. I am quite willing to think that what we here speak of to-night may be antiquated in six months. The wonderful technique, the ever-growing skill of the surgeon, and the fact that things become possible to-morrow which are not possible to-day, may make us all before long come to the conclusion that the percentage of risk is much less in operating in many instances than in trusting purely to medical treatment. I am free to admit this; but, speaking from our present knowledge, I think that it is right to select only certain cases for operation. I give the results of my personal experience, much of it gained in association with surgeons. In the first place, I believe that, in addition to perforative appendicitis, it is our duty to operate early on every case of appendicitis in which there are signs of abscess, or in which there is good reason to think that pus exists, no matter how little. Let us rather occasionally be mistaken than run the risk of not operating. Therefore, if we could come to greater accuracy in the diagnosis of pus, I hold that the main point in regard to operation would be solved.

I also think that while we may and ought to have much hesitation as to the propriety of operating when appendicitis occurs for the first time, yet with every subsequent attack this hesitation should vanish. The risk becomes greater and greater. I think that when a person has had more than one attack, certainly when he has had several, especially at short intervals, it would be quite right to consider an operation as his best chance. I say this, for I have seen the results of delay. It is true the character of the attacks will have much to do with the issue. If the appendicitis be merely catarrhal, or the result of something ingested that is readily gotten rid of, a number of attacks may be borne with impunity. But the parts become altered and weakened by the repeated disorder, and, unfortunately, diagnosis has not reached the point that we can be sure of the tissue-changes that have happened and the power to withstand ulceration.

Again, when there have been signs of disturbance of a chronic kind in the lower part of the abdomen, although there has been no distinct history of appendicitis, I think that it is better to operate if a well-marked acute attack comes on. I recall a case in the Pennsylvania Hospital in which a young man, with obscure abdominal symptoms and some thickening in the right iliac fossa, was attacked with acute appendicitis. He was doing so well that I could not make up my mind to advise operation, but perforation and rapid peritonitis followed. It was afterward learned that there had been a previous appendicitis, and the autopsy showed that an early operation would most probably have saved him. I saw a similar instance in a boy eleven years of age.

There are some points that arise with reference to the time of operation in acute appendicitis which are purely matters for the surgeon. But that we ought to operate if the case goes beyond a certain day, an opinion often promulgated, I cannot agree to. I have seen cases that have gone on for a long time, for eleven days, for fourteen days, and yet perfect recovery has taken place. Therefore I do not think that the absolute law which is laid down by some, that you must operate on or soon after the third day, is a law that holds good. We must judge by the character of the case, the general symptoms, the way it is progressing, the likelihood of the presence of pus, rather than by the mere number of days.

In conclusion, I will state that I know of no question in practical medicine that is a more important, a more solemn question than this one of operation in appendicitis. On the one hand, you feel that you may be led into an operation that is unnecessary, and that in the

best hands is attended with some risk, and, on the other hand, you know that delay may be fatal. It is, indeed, a trying question, and we must solve it according to our best judgment in individual cases with close thought, putting the operation off if we safely can, but remembering the issues at stake. If we err let it be on the side of early operation rather than on that of too long delayed operation.

CLINICAL MEMORANDA.

EXTRA-UTERINE PREGNANCY SIMULATED BY A SMALL TUMOR OF THE OVARY; OPERATION; RECOVERY.

By WILLIAM H. MORRISON, M.D.,
OF PHILADELPHIA.

The possibility of diagnosticating extra-uterine pregnancy before rupture of the sac has in the past received considerable discussion, but at present the generally accepted opinion is that such a diagnosis cannot be made with any great degree of certainty. A case on which I recently operated illustrates with such force the uncertainties attending the diagnosis of ectopic gestation that it seems worthy of record.

The patient, Mrs. X., thirty years of age, the mother of four children, has been under my personal observation for a number of years. In November, 1893, that is five months ago, she had a miscarriage at two or three months, from which she recovered without incident, with the exception that a slight tendency to bleed continued. For this I curetted the uterus some two weeks later. In the repeated examinations made at this time, nothing abnormal was detected in the pelvis. Following the miscarriage, menstruation recurred every twenty-four days, until February, when the period which should have commenced February 27th did not appear until March 11th, twelve days overdue. It, however, presented nothing unusual as far as the patient observed. Two weeks later, March 27th, she was taken with sharp recurring pains in the lower part of the abdomen, somewhat more severe on the right side. After a few hours these passed away, to reappear on the following day. With the pains there was a slight discharge of blood from the vagina. It was at this time (March 28th) that I was called. The pain, while acute, did not seem to be of great severity. There was no shock, no alteration in temperature, no disturbance of pulse. There was tenderness over the whole of the lower part of the abdomen not especially localized. There was no gastric or intestinal disorder to explain the abdominal tenderness.

Vaginal examination showed the uterus to be slightly enlarged. On the right side of the pelvis nothing abnormal could be discovered, but to the left of the uterus and low down was a globular mass, apparently one and a half or two inches in diameter, which seemed to be a cyst. It was quite tender on pressure, but could be displaced upward to a certain extent. This mass while in contact with the uterus was distinct from it. A sound introduced into the uterus gave a measurement of three inches, and as it was removed brought away two or three shreds of thin membranous tissue.

A diagnosis of cystic tumor in the pelvis, probably an extra-uterine pregnancy, was made, the condition of affairs explained to the patient and her husband, and operation advised. This was acquiesced in, and on March 31st I opened the abdomen and removed a tumor which was found to be the left ovary in a state of cystic degeneration. The tube was normal. The right ovary was brought to the abdominal incision, but as it was small and presented no evidence of disease, it was allowed to remain. The after-course of the case was uneventful and the recovery complete. The enlarged ovary was ovoid in shape, and about two inches in its longest diameter. It contained three cysts. At its outer extremity was a small cavity containing about twenty minims of dark fluid blood, evidently due to a recent hemorrhage. This probably was the explanation of the sharp abdominal pains. A second small cyst at the opposite extremity was filled with clear, watery fluid, while the bulk of the tumor was made up of a cyst containing amber-colored gelatinous material.

While this case presents nothing unusual from a pathologic point of view, it does offer features of interest from a diagnostic and therapeutic standpoint. The points bearing upon diagnosis may be stated as follows:

1. A woman in whom the more common causes of suppurative tubal disease, namely, specific infection and septic contamination, could be excluded.

2. The fact that she had been submitted to examination within a few months and no pelvic tumor found. This I consider a strong point in connection with the diagnosis.

3. A delay of nearly two weeks in the appearance of the menstrual flow.

4. The occurrence of repeated, sharp, intermittent, abdominal pains, with a bloody discharge from the uterus.

5. Enlargement of the uterus and the removal of shreds of membrane from its interior.

6. The presence of a movable, globular, elastic, sensitive mass at one side of the uterus.

These facts, while rendering the diagnosis of unruptured tubal pregnancy sufficiently certain to demand prompt interference, were, as the sequel shows, not sufficient to justify an absolutely positive diagnosis.

In the treatment of ectopic gestation, aspiration of the sac, the injection of various agents into it, and the application of electricity, have been recommended and are still advised by some. In the present instance, such treatment, on account of the close relation of the tumor to the vaginal wall, would have been readily applicable, but, as the operation demonstrates, would have been useless if not injurious.

The lessons which this case teaches are: first, that an absolutely positive diagnosis of unruptured extra-uterine pregnancy is not possible, no matter how distinctive the symptoms and physical signs may appear to be; and second, that until an absolutely positive diagnosis is reached, such treatment as aspiration or injection of the sac is not to be considered.

Congress of American Physicians and Surgeons.—The President of the United States will receive the members of the Congress, their guests and visitors, and their ladies, at the Executive Mansion, on Thursday evening, May 31st, from 9 to 10 o'clock. Cards of admission may be had at the office of registration.

THREE CASES OF ATTIC SUPPURATION IN WHICH OPERATION WAS FOLLOWED BY FACIAL PARALYSIS (BELL'S PALSY.)[1]

By L. J. HAMMOND, M.D.,
of Philadelphia.

I wish to report three cases of upper tympanic or attic suppuration, in which operation was followed by facial paralysis, for the purpose of learning from those of larger experience in this very important branch of surgery, how far it is possible to avoid this complication which, owing to the anatomy of these parts, is unquestionably a condition that is likely to occur. By reviewing our anatomy of this region of the middle ear we find it marked off at about its middle by the bony ridge which forms the covering of the facial nerve, or, indeed, the nerve may pass through this region entirely devoid of any bony covering. It will, therefore, be seen that nothing but the greatest care could possibly prevent wounding this important structure, or if the bony covering be present and carious, its removal cannot be accomplished without seriously interfering with the nerve. Another problem which my limited experience has not afforded me an opportunity of solving is whether the condition would be less likely to occur if the posterior operation (of Stacke) be employed instead of the operation through the canal, the latter being the method that I have employed in each case. The patients were all treated by thorough cleansing, both by means of the cotton applicator and with the post-tympanic syringe, as far as it was possible and as long as I felt it was wise to continue it. The results obtained, in so far as the suppuration was concerned in each case, I think justify the operative procedure.

Case I.—Mr. L., thirty-two years of age, first consulted me April, 1893, when he gave a history of suppuration of the left ear for twenty-two years; suppuration from the right side had lasted but a few months, while on the left side it had been persistent during the entire period; he had been treated at intervals, though without in any way affecting the condition. The examination when I first saw him showed in the right ear a depressed cicatrix in the lower anterior portion of the membrane and some general thickening; on the left side there was a fetid discharge from the canal, which on removal showed considerable destruction of the upper wall, and the bent probe readily passed into the attic region; the hearing for whisper-sounds was on the left side, one foot, on the right, about six feet; the tuning-fork gave R. upon both sides; the patient complained of a fulness and some aching and tinnitus. The treatment, which was continued from three times to twice a week, from April until September, consisted of thorough cleansing, both by means of the cotton-carrier and hydrogen dioxid, and syringing with hot water carried well up into the cavity, and then followed by dusting the canal with borated powder. The naso-pharynx was also treated each time the ear was treated. While this treatment served to greatly lessen both the fetor and the amount of discharge, the latter at no time entirely ceased, there being at each visit some suppuration from that region. The operation consisted of removing what remained of the membrane, malleus, and incus, the head of the malleus being lost and also a large part of the body of the incus; the cavity was then thoroughly curetted and part of the upper, posterior portion of the roof of the canal was carefully chiselled away; the whole cavity was then thoroughly washed out with a hot saturated solution of boric acid, and dusted with aristol, and the canal closed with a cotton pledget. Thirty-six hours after the operation, a marked paralysis was noted of the entire left side of the face, including the eyelids and brow, which fortunately subsided in six weeks. The suppuration had entirely ceased in eight weeks. The patient has reported to me once a month, and I have been gratified to find that the good results still continue.

Case II.—Miss K. McN., twenty years old, has had suppuration on the right side for fourteen years; she has no recollection of having had suppuration on the left side, though a lower, anterior cicatrix clearly proves the contrary; the condition followed scarlet fever. When she consulted me on June 12, 1893, I found the canal partially filled with desiccated pus, removal of which brought to view an attic filled with granulation-tissue, the removal of which left the malleus-head bare. This case was treated in the routine way described until the latter part of September, when the operation was performed. The membrane, malleus, and incus were removed; the malleus was apparently not carious, while a large portion of the body of the incus was lost; the entire cavity was then thoroughly curetted and treated as in the foregoing case; paralysis here appeared on the third day after the operation and continued for about seven weeks; the discharge had entirely ceased by the end of the tenth week, and the cavity is perfectly well at the present time. The examination of the membrane within a month past shows a perfectly healthy cicatrix. The hearing, which was very deficient, was not in any way improved, though she thought the tinnitus, which was very marked, was somewhat improved.

Case III.—Mrs. Le C., thirty-four years of age, has had suppuration from the left ear for thirteen years. When I saw her first, about one and a half years ago, there was free fetid discharge, which was more profuse in this case than is usually found in cases of attic suppuration; the bent probe passed well up into the attic, and the cleansing brought down large quantities of necrotic tissue, black and very fetid; the tuning-fork gave R.; the hearing was very good, a whisper being heard at four feet; she complained of vertigo and tinnitus, the former being so great that treatment by syringing was extremely difficult to carry out. After having treated the woman for a year and more without benefiting her to any great extent—indeed, if she went longer than a week without cleansing, the discharge would become as profuse and fetid as when I first saw her; the operation was performed November 2, 1893. In addition to removal of the malleus, the head of which was almost entirely destroyed, a portion of the posterior part of the roof of the canal was chiselled away, and what remained of the membrane was excised; the incus could not be found, and was probably destroyed; paralysis was noted in this case before she had recovered from the anesthetic; it was indeed complete. The suppuration had entirely ceased by January, though for a month previous to that time it had only been sufficient in amount to harden the powder that had been blown into the canal. The paralysis in this case has been per-

[1] Read before the Section of Otology, College of Physicians, April 3 1894.

sistent, and while it is at present showing evidence of subsiding, it will, I fear, be some time before it is completely relieved; the vertigo following the operation was also a very annoying symptom, and continued for two weeks; there was, however, but slight elevation of temperature. The case is now under treatment at the University Hospital, at the hands of Dr. Potts, the electrician, who has kindly furnished me notes as to the muscular reactions, his opinion being that the nerve was not severed, but that it had been greatly irritated, probably by the pressure of a spicula of bone against it.

ELECTRICIAN'S NOTES.—The muscles did not respond to the faradic current, but did to a moderate galvanic current (about 6 to 8 milliampères). Qualitative reactions were present, the muscles responding in the peculiar slow manner characteristic of degenerated muscles and the A C C was about equal to K C C. Owing to the fact that the muscles exhibited K C C of about equal strength to that of A C C six weeks after reception of injury, we were led to assume that the nerve had not been seriously injured and to give a good prognosis. Normal reactions have returned in some of the muscles—now something over two months since treatment was begun.

In none of the cases was there any perceptible change in the hearing. There was, however, apparently some lessening of the tinnitus in Case II, and absolute relief from the vertigo in the last case. In all, the discharge was stopped, and it is reasonable to believe cured, though I am not prepared to claim this latter fact absolutely. It is my opinion that the want of proper drainage is the sole cause for the persistence in attic suppuration, as we know that drainage through the tube is usually cut off by the inflammatory adhesions within the middle-ear cavity, and thereby leaving the attic region entirely without any drainage. It would, therefore, seem to be good surgery to remove all obstructions, even though so annoying a condition as paralysis may follow.

THERAPEUTIC NOTE.

SULPHURIC-ACID PASTE IN THE TREATMENT OF EPITHELIOMA OF THE FACE.[1]

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EPITHELIAL carcinomata about the eyelids, brow, nose, and cheek are not uncommon. The clinical history of an ordinary case is about as follows: Beginning usually after middle life as a small, flat, wartlike growth, the new-formation appears very innocent at first, attracting but little attention, perhaps, until some years elapse, when it begins to ulcerate; the ulceration may heal temporarily, only to begin anew later on, when it suddenly begins to spread, attacking all kinds of tissue, sometimes destroying the eyeballs, nose, and bones of the face, the patient being in a most pitiable condition until relieved by death. Fortunately most of these cases are found in very old people, who die of natural causes before the growths give much annoyance. Occasionally, however, we see them in patients between forty and sixty years of age, with whom they may become a very serious trouble, and even destroy life years before the allotted time. By proper treatment before too much tissue is involved epithelioma of the face can unquestionably be eradicated, and yet we see now and then cases that have passed beyond all help of the physician or surgeon. Inquiry into the history of these hopeless cases will usually elicit the fact that the patient has allowed the trouble to reach this stage owing *to the dread of having it cut out with the knife*, which may have been recommended by his physician, or to escape this he has had applied some "cancer cure" that he has heard of or seen advertised, which has served only to irritate, and often rapidly extend the disease. Most authorities recommend excision, and no one doubts its efficacy; but if the dread of the knife causes one to postpone treatment, it is well to try something unobjectionable to the patient and equally reliable; so we naturally turn our attention to local applications. We find many preparations recommended—among them may be named caustic potash, citrin ointment, Vienna paste, and pastes of chlorid of zinc, arsenic, and sulphuric acid, as well as the cautery. Of these some are very painful and harmful. Though the chlorid of zinc paste and the cautery seem to be the most frequently advised, my own experience leads me to call especial attention to the value of a paste made of sulphuric acid and charcoal from saffron, in about equal quantities by weight. It is by no means a new remedy, having been used years ago by Velpeau, Michel, and others; but little has been written about it, and I do not think it is used now as generally as its efficacy justifies. I first saw it used by Dr. J. J. Chisolm, while I was his assistant at the Presbyterian Eye and Ear Hospital, where it was frequently employed during the three years that I was connected with that institution, and in no case did I see an unfavorable result.

In a recent letter from Dr. Chisolm he speaks of its use as follows: "I have been using carbo-sulphuric paste for thirty-five years in epithelial troubles of the face. It is one of the very old-time applications. I was taught its value as a student. The very fact that I continue to use it is because I know nothing quite so good. If properly made with flowers of saffron, which makes the finest kind of carbon, it becomes a tenacious paste that will stick to a raw surface and become a part of the slough or dry scab, when slough and paste come off together, leaving a newly healed surface, which delights the heart of the surgeon. It is a first-rate application, which every one should know about.

If the application is limited to the diseased tissue, it is not very painful unless the new growth is extensive. A few applications usually suffice, when a dry scab is formed, which peels off somewhat like a vaccination crust, leaving only a slight scar.

A single case illustrates its value as compared with some other methods. About eighteen months ago Dr. J. came to me to have a small epithelial carcinoma removed from the side of his nose near the inner canthus of the right eye. He told me that he had recently returned from New York, where he had taken his wife to a special hospital to have a similar trouble removed from her face. She was kept in the institution at heavy ex-

[1] Read before the Medical Society of the District of Columbia, April 18, 1894.

pense for three weeks, during which time caustics and poultices were applied. She was cured, but with a great deal of discomfort, loss of time, and heavy expense. Not being pleased with the treatment, the Doctor, whose own case was pronounced worse, came to me to have the sulphuric-acid paste applied. Two applications were made in three days, and about the tenth day the growth came away entire, the Doctor not having been kept from his practice more than a half-hour. I never advise this paste when the mucous membrane is involved. In all other cases that have not progressed too far, I like it as well as the knife, and think if physicians would use it with patients who postpone treatment from the dread of cutting, there would be few cases that reach the hopeless stage.

NEW DEVICE.

A NEW FORM OF PALATE-HOOK.

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WHILE in most cases posterior rhinoscopic examination is possible without the aid of a palate-hook, in some instances such a device becomes an absolute necessity.

In view of this and on account of the generally unsatisfactory forms of retractor which illustrate the instrument-maker's catalogues as well as most text-books on rhinology, I desire to call attention to the instrument shown in the accompanying cut.

The main portion of the retractor consists of a piece of medium-weight steel wire about twelve inches long. This is bent back upon itself at its middle and there again sharply bent up on the flat to form a hook. At about two and a half inches from this hook the ends are again bent upward upon the flat, at an obtuse angle. From the hook to this latter bend the wires are securely fastened; from there on they are separated horizontally in a V-form. Over this outer portion slides a flattened ring having projections upon its inner side to catch in parallel notches upon the outer surface of the diverging arms. To this portion also belong the two curved arms which rest upon the upper lip, or which, if necessary, may be made to rest within the nostrils. Flattened metallic handles are fastened to the ends of the main portion.

In using the instrument the handles are approximated, and the slide drawn out until in contact with them. The hook is then introduced behind the palate, the necessary traction made to draw it forward, and the slide allowed to fall until the bars engage the lip or slight pressure may be made upon it with the ring finger.

Simply allowing the handles to spring apart fixes the catch and the instrument is in position. The angle at the vertex of the V throws the handles above the lip and thus out of the way of all manipulations.

In removal, the handles are pressed together, the instrument pushed slightly, and the hook disengaged by turning, when it may be withdrawn.

The superiority of this to all other forms of self-retaining retractors lies in the fact that both introduction and withdrawal may be accomplished with one hand. By the exercise of a little dexterity, the retractor may be used and a complete examination made with one depression of the tongue—often a great convenience when that organ is muscular and rebellious.

In my own practice I have frequently had occasion to use the hook, and it has always proved very satisfactory. In introducing this instrument I can unfortunately make no personal claim of invention. It was devised several years ago, by an American whose name I have been unable to learn, while studying in Vienna, and although in use there, is not generally known in this country.

1804 CHESTNUT STREET.

MEDICAL PROGRESS.

Akromegaly.—At a recent meeting of the Philadelphia County Medical Society, DR. S. SOLIS-COHEN presented a case of akromegaly exhibiting some structural changes not found, or at least not recorded, in all cases, and called attention to the apparently good results of treatment with desiccated thyroid gland.

The patient, some fifty-two or fifty-three years of age, came under observation about eighteen months before for relief from excruciating headache, which had for many months been so intense at times as to prevent his lying down, pressure on the scalp increasing the pain. Attention was at once attracted to the peculiarities of facial structure presented, and further examination demonstrated the characteristic curvature of the back and enlargement of the hands and feet. The patient stated that his features had materially altered within the preceding four years.

He had had to enlarge his hat-band twice, and his shoes twice within three years. The shoes were a little longer but much broader than formerly. The hands were broadened rather than lengthened; the fingers not exactly "sausage-shaped," but thick and clumsy. Distortion of the joints was to be attributed to his occupation, and probably antedated the development of the akromegalic conditions. Part of the coarseness of the skin of the hands might likewise have been due to occupation.

The enlargement and projection of the superciliary ridges, the lateral projection of the malar bones, the broadening and deepening of the chin, gave the face the characteristic lengthened, elliptic outline. The great enlargement of the nose; the thickening and projection of the lips; the heavy folds, deep furrows, and somewhat greasy texture of the skin, especially of the forehead; the stiffening and projection of the auricular cartilages, completed the picture. The lower jaw did not, however, project beyond the upper jaw. The teeth were bad. The tongue was thickened and deeply fissured. The voice was deep and had a monotonous quality, the latter only partly attributable to a "boilermaker's deafness." The laryngeal and tracheal cartilages were almost if not completely ossified. The thyroid gland could not be demonstrated. The forward thrust of head and neck,

from curvature of the cervico-dorsal spine, threw the clavicles well out from the windpipe, leaving a great hollow just above the sternum. The clavicles and scapulæ were enlarged, the ribs were broadened and apparently in contact, and the costal cartilages seem to be ossified. The narrowing of the chest and the percussion-phenomena showed an absence of emphysema; yet the breathing was scarcely at all thoracic. There was an almost inappreciable rise and fall of the clavicles, showing slight vertical motion of the thorax as a whole, and on great inspiratory and expiratory exertion an expansion of from 0.5 to 1 cm. could be determined at the nipple line. Breathing was almost exclusively abdominal.

The patient was becoming feeble; his muscles were wasting, though electric examination showed only quantitative change.

He presented vasomotor phenomena—flushing, occasional vertigo, and polyuria. The urine was deficient in solids, but did not contain sugar or albumin, nor was other abnormality detected. After treatment with thyroid-powder (5 grains in capsule every morning) the quantity of urinary water decreased and the urea-content arose, while the distressing headache was completely relieved. An intercurrent attack of violent sciatic pain disappeared after recourse to thyroid medication.

Upon the somnolence, however, no effect was obtained. The patient could still go to sleep upon the slightest provocation—indeed, without any.

Ophthalmoscopic examination disclosed no lesion of the fundus and no error in the visual field, a confirmation of the view that hemiopia and other visual errors are merely secondary phenomena, due to pituitary enlargement, and that the latter is not necessarily a feature of the pathologic complexus. The opinion was expressed that early treatment with thyroid preparations will entirely prevent overgrowth of the pituitary body, embryologic analogy seeming to indicate that it is an attempt at compensatory hypertrophy, ill-directed and baneful only by reason of the altered position of the structure.

Pickaxe Wound of the Brain.—At a recent meeting of the Surgical Section of the College of Physicians of Philadelphia, DR. JOHN B. ROBERTS presented a man who came under his observation with a small wound of the skull through which brain-substance oozed. Four weeks previously he had been struck with a pickaxe, shortly before admission to the hospital. Within an hour and a half of the injury the skull was laid open, and pieces of bone were found driven into the brain. With the mallet and chisel the edge of the fracture was cut away, and the fragments of bone removed with forceps from the brain-tissue. A finger passed nearly an inch down into the brain-structure, which was soft. The soft brain-tissue was then washed away with a stream of bichlorid solution. As there was a good deal of oozing from the pia a small piece of gauze was stuffed into the wound to make a little pressure, the scalp-wound was sewed up at the ends, but the gauze was allowed to stick out at the center. The wound united by first intention where the edges were sewn together; and by second intention where the wound had been kept open by the gauze, which was removed at the end of twenty-four hours. The wound had finally healed, and the man was well. The pulsation of the brain could be seen where the bony wall was absent.

The Mortality from Typhoid Fever.—From an analysis of the cases of typhoid fever, 144 in all, admitted to the London Temperance Hospital during a period of twenty years, and a comparative study of the results obtained in other hospitals, BENJAMIN WARD RICHARDSON (*Asclepiad*, No. 40, vol. x, p. 352) concludes that the average hospital mortality from typhoid fever is from 15 to 16 per cent. Cases received in the earliest stages and treated judiciously may exceptionally yield as low a mortality as even 2 or 3 per cent. The dangers occurring during the diseases are due to complications, and especially to those involving the alimentary canal; these dangers are much intensified by movements of the body and errors of diet. In ordinary hospital practice, including every kind of case at any stage, 9 per cent. is the most favorable average. In spite of complications, so often present when the patient is admitted, it may be possible to keep the mortality down to 9 or 10 per cent, without any use of alcohol; with baths and other suitable appliances still more encouraging results may be obtained. There is not a shadow of proof that abstinence from alcoholic treatment increases the mortality of typhoid fever.

Suprapubic Cystotomy in an Infant Two Years Old.—MINEUR (*La Policlinique*, 1894, No. 8, p. 127) has reported the case of an infant, two years old, that for two months cried upon passing water, and gave evidence of irritation referred to the penis. Examination with a sound disclosed the presence of a large calculus in the bladder. It was decided to remove the foreign body by suprapubic cystotomy. The bladder was distended with a solution of boric acid, and a water-bag was introduced into the rectum. An incision, two inches long, was made in the median line above the pubis; the bladder was supported by a suture on either side and then incised. The calculus was removed with the aid of forceps, and a rubber drainage-tube was introduced and held in place by means of a suture. The bladder was fixed to the abdominal wall and the wound closed, except at the point where the drainage-tube made its exit. On the sixth day the tube was removed, and perfect recovery soon ensued.

The Pathogenesis of the Laryngeal Complications of Typhoid Fever.—LUCATELLO (*Berliner klinische Wochenschrift*, 1894, No. 16, p. 379) has reported a case of typhoid fever in which, in addition to the classic lesions, there existed a reddish-gray hepatization of the upper lobe of the right lung and a catarrhal condition of the mucous membrane of the larynx. During life puncture of the spleen on the tenth day disclosed the presence of the typhoid-bacillus, and examination of the saliva and of laryngeal secretion on the twelfth day disclosed the presence of the same organism. It is believed that the changes induced by the presence of the organism in the larynx, sometimes resulting in ulceration, predispose to the lodgment of other microörganisms, including those with pyogenic properties, and it is through these that the secondary processes sometimes observed are brought about.

To Clean Soiled Slides and Cover-glasses ZETTNOW (*Centralblatt für Bakteriologie u. Parasitenkunde*, Bd. xv, No. 15, p. 555) recommends the employment of a solution containing 200 grams of red potassium chromate, to which are added 2 liters of hot water, and then, gradually, with constant stirring, 200 c.cm. of crude concentrated sulphuric acid. As the fluid will not penetrate beneath affixed cover-glasses, it is necessary, first, to remove these by gentle heat over a flame. To facilitate the cleaning of cover-glasses these may be heated in the fluid over a water-bath, care being taken that the fluid be well distributed, so as to act on all. The covers may then be washed in water, and afterward in a weak solution of sodic hydrate for five minutes, twice or oftener, and finally rinsed with alcohol.

THERAPEUTIC NOTES.

Congelation in Diagnosis and Treatment.—At the twenty-fourth annual meeting of the Medical Society of the State of California, DR. ALBERT ABRAMS spoke highly of the therapeutic application of freezing, by means of chlorid of methyl, or rhigolene, or some similar volatile body in the treatment of neuralgia.

In order to intensify the shock in freezing, the part to be frozen may first be rendered anemic by means of an Esmarch bandage or by parenchymatous or hypodermatic injections of water. By means of the first procedure congelation occurs sooner, is more intense, and of longer duration.

The second, which is denominated "reinforced freezing," can be employed in conjunction with the first, and is executed as follows: With a large-barrelled syringe a sufficient quantity of water is injected beneath the skin over the part to be frozen, or directly into the tissues, until an appreciable bulging is produced. If the spray is now directed on the protuberant part, a lump of ice is formed in the tissues or under the skin.

Congelation has been thus employed as a means of diagnosis for the following purposes: To distinguish between neuralgia of central and that of peripheral origin; to differentiate neuritis from neuralgia; to locate the lesion in neuralgia; to differentiate many neuralgic affections of the head, and thoracic and abdominal parietes, from visceral disease.

If a nerve, the seat of neuralgia, is frozen nearest its point of origin, the pain will disappear if the neuralgia is of peripheral origin, and persist if of central origin. In the absence of spontaneous pain, the painful points in the course of the nerve-distribution may serve as guides. Freezing is said to be a specific for all recent forms of uncomplicated neuralgia.

Pain referred to an accessible nerve, treated by freezing near its point of exit, and failing to yield to repeated applications of the spray, is not a veritable neuralgia, but a neuritis, or complicated neuralgia.

In the treatment of neuralgia, when reinforced freezing is not advisable, recourse may be had to a modified method, which is denominated "coin-freezing." The method is as follows: A coin of indifferent size is employed, and, having been previously moistened in water, is placed in close contact with the site to be acted upon; the spray is next directed on the coin. After allowing the spray to act for a certain time, which is determined by experience, it will be found impossible to remove the coin without some difficulty. The advantages claimed for this method are: That the freezing is more thorough, and that it can be accurately localized. It is less severe than reinforced freezing.

Neuralgia of the intercostal nerves may be accompanied by visceral symptoms of such prominence that the intercostal neuralgia is overlooked, and treatment is directed toward a presumable visceral disease. Such cases, while presenting a varied clinical picture, are frequently mimetic, even if only atypically so, of gastric, cardiac, renal, vesical, and esophageal affections. As a rule, however, vertebral tenderness corresponding to the exit of the nerves can be elicited, and when congelation is practised over the seat of vertebral tenderness during a paroxysm, the latter is nearly always inhibited.

It was finally pointed out that the use of congelation may be extended in surgery to the treatment of local tuberculosis, tumors, etc. Parenchymatous injections of water into tumors, coupled with freezing (reinforced freezing), may prove of inestimable value in the treatment of neoplasms. In parasitic affections of the skin good results had been obtained in some cases.

The Pathogeny and Treatment of Sciatic Neuritis.—At the recent International Medical Congress, PERSONALI (*Le Mercredi Médical*, 1894, No. 17, p. 203) expressed the view that a large number of cases of sciatic neuritis represent but a secondary process, depending upon the extension to the sciatic nerve of an inflammatory process set up by various causes in the connective tissue surrounding the coxo-femoral articulation. Support for this view is found in the pain early referred to the articulation, in the limping gait observed before the sciatic nerve is known to be involved, in the pain induced in parts adjacent to the joint by rotation of the thigh, by the extension of the pain to the entire hip, to the crest of the ilium, and to the external border of the sacrum. The treatment employed and advocated in these cases consists in the employment of the faradic current. One electrode is applied to the lumbar region; the other electrode consists of a brush made of fine, flexible copper wire, which is rapidly passed over the entire affected hip, the sciatic nerve, and the muscles of the calf; then the rapidity is diminished in order to accustom the patient to the pain of the current; and the sitting is concluded by leaving the brush in place for a minute successively upon the painful points upon the hip in the course of the nerve, and in particular over the great sciatic notch, at intervals of twenty or thirty seconds. A strong current is used, as the pain is intense; the sitting is repeated daily, and the entire treatment covers from twenty-five to forty-five sittings. The first result of the treatment consists in an aggravation of the symptoms for about a week; thereafter the pains progressively disappear.

Guaiacol in the Treatment of Erysipelas.—WHALEN (*Journal of the American Medical Association*, vol. xxii, No. 17, p. 619) reports the treatment, with satisfactory results, of several cases of erysipelas with topical applications of guaiacol in doses of from 20 to 30 minims.

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SATURDAY, MAY 26, 1894.

NOW, THE JUDICIAL COUNCIL!

By the action of the Medical Society of the State of Pennsylvania in formally presenting to the Judicial Council of the American Medical Association a statement of the facts in the case of *The Association* vs. *The Trustees*, the subject becomes one for judicial inquiry and determination, and further discussion *pro* or *con* may well be suspended. It is proper, however, that the issue brought before the Council should be clearly understood, and our last word on the subject will be devoted to this purpose. As we read the statement of the Medical Society of the State of Pennsylvania, it charges the Trustees, not individually but as a body, with official misconduct. If a minority of that body or any individual member has by word or vote endeavored to prevent the misconduct complained of, this fact should now be made clear, so that the innocent may not suffer with the guilty. Should no statement as to individual responsibility be volunteered by either majority or minority, it is the duty of the Judicial Council to inquire into all the facts, not only in justice to individual Trustees, but in justice to itself, to the Association, and to the Medical Society of Pennsylvania, which appears as prosecuting attorney.

The indictment brought by the Pennsylvania Society has two counts:

1. That in originally admitting advertisements of secret nostrums into the columns of the *Journal*, the Trustees were guilty of a *breach of trust;* inasmuch as the organic law of the Association, virtually constituting a deed of trust under which the *Journal* is administered by said Trustees, prohibits such action.

2. That in continuing to publish such advertisements after the Association had by formal vote directed their attention to the prohibitory clause of the deed of trust, and ordered them to respect it, the Trustees added to their original violation of trust the new offence of *overt rebellion* against the constitution and laws of the Association.

The additional charges of permitting the publication of personally abusive letters, and of inserting the advertisement of a certain Sanitarium Company, are simply cumulative, and fall under the two heads of *breach of trust* and *rebellion*, already stated.

Incidentally the attention of the Judicial Council is directed to the connection of certain officials and ex-officials of the American Medical Association with the Sanitarium Company alluded to.

Failure by the Judicial Council to act with due appreciation of the gravity of the case laid before it is a disaster not to be anticipated. Those who count upon bringing about such failure forget that it would be tantamount to a confession that the Code of Ethics is meant for show rather than for use; or if for use, merely to frighten the little boys with, while the big ones climb the farmer's apple-tree, and unhindered help themselves at leisure. It would inevitably be taken as a virtual repeal of the Code, in Council, without awaiting the verdict of the Association. It is, we repeat, a disaster not to be anticipated.

Pennsylvania has been patient in waiting, temperate in statement, and moderate in demand. It does not, as it might well have done, ask the censure or expulsion of the Trustees, but submits the facts to the Judicial Council for such recommendation as in the view of the Council may best vindicate the authority of the Association. It is purification, not punishment, that is aimed at, and should the Council, in its wisdom, decide to temper justice with mercy, Pennsylvania will surely not object.

The whole proceeding, however, the humiliating necessity for the presentation to the judicial branch

of the Association of such grave charges against its most important executive branch, should make us seriously ponder. The only defence thus far made by the organ of the Trustees is that the breach of trust complained of was done for the sake of money-making. This defence assumes that the Association will adopt as its motto: "Whatever pays is right!" Had the Code of Ethics been repealed, it would have been difficult to repudiate this assumption. A more impressive object-lesson of the utter demoralization that would follow the adoption of the report of the majority of the revision committee could not well be imagined.

We trust that the delegates to San Francisco will take the matter earnestly to heart, and especially in selecting the officers and Trustees of the American Medical Association. It is not enough that these should be men of high personal character, untainted by questionable associations; they must not be men who, from indecision, timidity, or that amiable weakness miscalled "good-nature," will permit official wrong-doing to go unchecked or unchallenged.

EDITORIAL COMMENTS.

Reforms in the Care and Treatment of the Insane.—It is not often that a speaker is invited to criticise those whom he is asked to address; but this is the unique position in which Dr. Weir Mitchell found himself on the occasion of the fiftieth annual meeting of the American Medico-Psychological Association just held at Philadelphia. When first asked to speak, Dr. Mitchell wished to decline on the rather frank plea of not having anything good to say of those, as a body, who extended the invitation. Upon being assured that fair criticism would be received in a proper spirit, Dr. Mitchell hesitatingly accepted the invitation. That he was as good as his word none will doubt who had the privilege of hearing Dr. Mitchell on this occasion. Bristling with criticism was the address—criticism of the severest kind, yet well meant and perhaps, as even those most nearly concerned may admit, not entirely undeserved. The numerous defects in the management and administration of hospitals for the insane was clearly and forcibly indicated, and the requisite and suitable remedies consecutively pointed out. Reference was made to the seclusion with which the hospital alienist ordinarily surrounds himself, not coming in sufficient and frequent contact with physicians generally, thus failing to give and receive new knowledge and losing the stimulus that friendly competition and friction with one's colleagues always affords. Regret was expressed that hospital alienists had not contributed more largely to medical thought and had not furnished answers to many of the unsolved problems connected with diseases of the mind. The need, aye, the demand for skilled nurses for the care of the insane, both in hospital and out of it, was strongly emphasized, and deficiencies in equipment as regards special therapeutic measures, such as massage, electricity, hydrotherapeutics, and the like, were forcibly pointed out. Particular stress was laid upon the importance of furnishing employment for the patients, and particularly out-of-door occupation. Concerning this urgent necessity The News has frequently spoken its word. The question was raised if sufficient thought were given to the future of cases dismissed as cured, as to whether or not directions were given as to the mode of life, in order to prevent relapse or recurrence. For many of the evils it is admitted that much blame attaches to the extra-medical management. Among other things, it is too much to expect that one man shall be both administrative superintendent and medical director. The appointment of medical officers on the basis of political adherence was condemned in language none too severe, and the inadequacy of the average board of managers was only too vividly and faithfully delineated. Dr. Mitchell's ideal hospital for the insane would include a group of buildings near the city, beautifully surrounded with Nature's decorations and amply endowed; a chief medical officer, who should live and spend a part of his time outside of the hospital; an adequate resident staff, a full corps of trained nurses, and a consultant staff comprising the ablest alienists and neurologists to be had, and to be selected solely on account of their ability. If the deficiencies and evils pointed out by Dr. Mitchell were corrected, and if but a tithe of the reforms advocated were put into execution, the art and the science of medico-psychology will have received an impetus whose influence will reach far beyond the present and far beyond the circle of those to whom defect and remedy were directly pointed out.

Disgusting Wire-pullers.—The success of the methods of the lowest type of governmental and legislative politicians has served to give us some rather stupid imitators in medicine. In almost every medical society will be found a clique addicted to the ignoble arts of "pipe-laying" and office-scheming. For months prior to an election of officers these fellows are snakily at work, "fixing" matters and men with a view of forestalling or prejudicing the minds of electors, or of nominating committees, or of those who appoint such committees. According to current report the officers of the American Medical Association have already been chosen and their election assured by the wire-pullers. There is never the least doubt about the motive of the politicians—such men have but one motive. It is a motive thoroughly well recognized and understood by those who, unselfish and frank, have had dealings with these thoroughly selfish and artful tricksters. The tools made use of for their purposes are the thoughtless, the trustful, the stupid, the indifferent. The clique is usually made up of a few, cunning, oily, and sly, who never express an opinion, and who want to be leaders and manipulators, and who especially want consultation-practice; there are also others hungry for nostrums, jobbery, and profit; still others more hungry for office to satisfy vanity and ambition; a few gushers and "big-hearted," "broad-gauge" fellows with a hidden world of slimy selfishness beneath the hail-fellow-well-met masks—all "on the make" (one is compelled to use curbstone slang

to describe them)—all caring as little for scientific medicine, humanity, or our profession, as a lot of dickering Senators or Tammany politicians care for justice or for good government.

Is it not time we made an end of this execrable nonsense? The attempt to boost oneself or his "pals" into office, or to get the appointment to deliver "the address in ——," to "fix" nominating committees, to forestall the free and spontaneous action of the electors, is simply disgusting. The things that the medical politicians scheme for, by reason of the very facts of the schemers and the schemings, are precisely the things that should *not* be done.

A Desirable Amendment to State Licensing Laws.—While of course it is desirable to prevent incompetent and unqualified persons driven out of one State by medical license laws from settling in another, it is also desirable that competent and qualified physicians removing from one State to another should not be subjected to unnecessary annoyance and expense. Would it not be possible to incorporate in the various State laws an identically phrased amendment, providing that a physician legally qualified to practise in any State of the Union in which a medical license law is in effect, should be entitled to register in any other State upon presentation of a certificate of qualification from the licensing-board of his own State? In some of the recent State laws there is, we believe, a proviso that anyone who has successfully passed an examination before the Licensing Board of another State shall be entitled to practise without reëxamination, but we should be pleased to see the same privilege, or rather right, extended to competent physicians who graduated before the days of Licensing Boards, and to whom reëxamination would be a hardship, while unnecessary for the protection of the community. Such an amendment to existing laws as would secure the end desired without breaking down any of the safeguards against the irruption of quackery, established with so much difficulty, might, we think, be easily drafted by a committee of the American Medical Association, and we commend the subject to the attention of the Section on State Medicine.

REVIEWS.

Proceedings of the Philadelphia County Medical Society. Vol. xiv. Session of 1893. Lewis H. Adler, Jr., M.D., Editor. 8vo., pp. xxviii, 484. Philadelphia: Wm. J. Dornan. Printed for the Society, 1893.

This volume of *Transactions of the Philadelphia County Medical Society* is calculated to maintain the high standard of work for which this eminently representative body is known. We can only select for reference a few of the large number of subjects discussed. Perhaps the two most important discussions are those on the subject of abortion, particularly in its medico-legal aspects, and that on the steps to be taken in the prevention of tuberculosis. We are gratified to learn that a committee of five has been appointed to investigate the question of the advisability of presenting to the Legislature a bill looking toward the making of the statements of patients to their attending physicians privileged communications. The News has already expressed its conviction that the physician should, in this connection, be placed upon the same plane as the lawyer, and should be permitted in a court of law to decline to divulge information communicated by patients in the strictest of confidence. It is already well known that the County Society has adopted a resolution recommending that tuberculosis be placed upon the list of diseases to be returned to the Board of Health. The agitation has not been devoid of good, for the Philadelphia Board has, since, taken judicious action, issuing circulars of information and offering to undertake disinfection whenever requested by a physician. Registration of cases is invited, but has not been made compulsory. A paper entitled "Hypodermatic Medication in Syphilis," by Dr. Lawrence Wolff, and another entitled "The Present Position of the Hypodermatic Method in the Treatment of Syphilis," together with the discussion of both, give a good *résumé* of the opposing views upon this important subject. Attention should further be called to the admirable portable tub described by Dr. W. R. Batt, which thus makes practicable the almost universal employment of the cold bath in the treatment of the febrile process. The book also bears evidence of the operative activity of the gynecic surgeon.

The volume, as a whole, is a most creditable one, for the preparation of which not a little praise is due the editor. The mechanical details are of the usual high standard that characterizes the work of Dornan.

Transactions of the American Orthopedic Association. Vol. VI. Philadelphia: Wm. J. Dornan, 1893.

This volume contains thirty-three valuable contributions to orthopedic literature from some of the foremost orthopedists of the country. In his address, the president outlines briefly the history of the Association, illustrating therein the value or power of a thought properly directed and carried out. Scientific and practical papers on the knee by Willard, Judson, Phelps, Lovett, Taylor, and others, show thought and research in preparation. Several new knee-splints are reported which indicate originality on the part of the authors and also that methods of obtaining fixation and immobilization are being diligently sought for, though unfortunately they have not yet been discovered. The mechanical and surgical aspects of hip-joint disease are discussed by Bradford, Judson, Sherman, and others, and quite a number of hip-splints described and illustrated, indicating the need which exists of some simple form of appliance which, with certain modifications for individual cases, can be depended upon to combine extension and immobilization.

The historic papers of Judson on "Traction in Hip-disease," Griffith on "Tumor Albus," and Wilson on "Bone Operations in Equino-varus" are especially instructive contributions. Papers on other topics by Myers, Weigel, and others, and presentations of orthopedic instruments of various description also occur. The book is useful as a reference to individual opinions and judgments as expressed in the papers and the discussions following their presentation.

Philadelphia Hospital Reports. Vol. II, 1893. Edited by Charles K. Mills, M.D., and James W. Walk, M.D. 8vo, pp. x, 292. Philadelphia: J. B. Lippincott Company, 1893.

We have only words of welcome and praise for this second volume of the *Philadelphia Hospital Reports*, which contains some forty-four articles, of varying degree of interest and value, together with a catalogue of the specimens contained in the Pathological Museum. This collection of specimens constitutes really the only permanent resource of the hospital for purposes of instruction and study, as the clinical records and, to a certain degree, the pathologic records, will not afford much help to future investigators. We thus have good reason to be doubly glad to have some permanent record of the clinical and pathologic work of the hospital, a field rich beyond conception in material of both kinds, and take this occasion to express the hope that a perfected system of record-making and record-keeping may be instituted, in order to make the observations of value, not only to those now in the service, but that they shall constitute records of permanent value, to be referred to with satisfaction and profit by those who may in the future desire to consult such statistics. This volume contains a sketch, together with a good lithographic likeness, of the late D. Hayes Agnew, and also a sketch of the late Alice Fisher.

Transactions of the American Dermatological Association for 1893. Edited by George Thomas Jackson, M.D., Secretary. Pp. 82. New York, 1894.

The contents of this volume include a number of valuable and interesting papers, several of which are illustrated, discussions on Pityriasis Rosea and Pemphigus, and the Report of the Statistical Committee. There is also a list of the publications of the members during the year ending September 1, 1893. Among the papers may be mentioned that of Dr. H. Radcliffe Crocker, of London, on "Lupus Erythematosus as an Imitator of Various Forms of Dermatitis." Cases are described in which the lesions closely simulated those of erythema papulatum, erythema tuberculatum, psoriasis guttata, and lichen planus, the latter illustrated by an excellent colored drawing. In an instructive "Contribution to the Pathology of Acne Varioliformis Hebræ," Dr. John Addison Fordyce arrives at the conclusion that the affection is "an inflammation of the pilo-sebaceous system, probably microbic in origin," and that Bazin was correct in naming it acne pilaris. The histologic dissimilarity of hydradenitis and acne varioliformis, between which the clinical resemblances are very close, is explained on the supposition that in the one case the pathogenic organisms penetrate through the sweat-ducts and in the other through the hair-follicles.

Annual Report of the Health-Officer of the Port of New York for the Year 1892. 8vo, pp. 120. Albany, 1893.

Dr. Jenkins' report covers forty-seven pages, the remainder of the book consisting of seven appendices. It is mostly a narrative of the threatened invasion of cholera in the autumn of 1892, and bears evidence of the author's irritation at the criticisms of his conduct during that episode.

In Appendix E, by Dr. J. M. Byon, there is given a very interesting account of the work done by the medical staff, nurses, and assistants at Swinburne Island and the lower quarantine station. Of this the part which will most engage the attention of the profession is that bearing upon the treatment of cholera by Cantani's method of hypodermatoclysis, or the free injection beneath the skin of saline solutions. Together with enteroclysis, or rectal injections, usually of tannic acid in solution, this plan seems to have been found of essential value.

Transactions of the American Association of Obstetricians and Gynecologists. Vol. VI, for the year 1893. Philadelphia: Wm. J. Dornan, 1894

This volume scarcely calls for extended review in these columns, inasmuch as a practical *résumé* of the proceedings of the last meeting of the Association was published in The News of June 10, 1893, at page 640. It only remains to be added that the *Transactions* makes a most desirable volume, upon the editorial and mechanical preparation of which the Association is to be congratulated. At the end of the volume is a splendid likeness of the late George Jackson Fisher, of Sing Sing, N. Y., presented in connection with a memorial by Dr. William Warren Potter.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Ninety-fifth Annual Session, held at Baltimore, Md., April, 1893. Also Semi-annual Session, held at Easton, Md., November, 1892.

In addition to the usual lists of members, of officers, of committees, various reports, a record of the minutes of the two meetings of the Faculty, and sundry other matters, this brochure contains the President's Address; an interesting and valuable article by Dr. Louis McLane Tiffany, entitled "The Treatment of Facial Neuralgia by Excision of the Extra-cranial Portions of the Fifth Nerve;" as well as the Annual Address by Dr. Reginald Fitz, a timely article entitled "Intra-peritoneal Hemorrhage."

Transactions of the Medical Association of Georgia. Forty-fourth Annual Session. 1893. Atlanta, Ga.

This volume of *Transactions* contains, besides the President's Address, thirty-seven papers of varying degrees of merit. Fourteen are upon subjects included under medicine, hygiene, etc., twelve belong to obstetrics and gynecology, eight are surgical, and three are upon ophthalmic subjects.

The matters discussed give evidence of the practical interest of the meeting, but we cannot help noticing the fact that there are but few contributions on questions both in medicine and surgery that have recently engaged special attention.

Transactions of the Texas State Medical Association. Twenty-fifth Annual Session, 1893.

As is usual in a volume such as the Transactions of a local society there is much that is only of a passing interest. But this volume of *Transactions* embodies a fair proportion of valuable papers; especially would we

mention the article of Dr. Smith, on the "Generalization of Carcinoma in the Stomach," Dr. Cerna's report on the "Action and Uses of Pental," Dr. Thompson's discussion of "Whitehead's Operation for Hemorrhoids," and Dr. Hadra's "Contribution to the Pathology of the Fourchet."

Transactions of the Michigan State Medical Society for the Year 1893. Volume XVII. Detroit: Published by the Society. John Bornman & Son, Printers, 1893.

This volume, neatly printed and adorned with a portrait frontispiece, contains a number of valuable papers. That by Dr. Collins H. Johnston upon the Brand method of cold-bath treatment of typhoid fever is specially admirable in its clearness and force, and exposes the errors of many text-books and papers which do not give Brand's method, although they purport to do so.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Forty-fourth Annual Session, held at Philadelphia, May 15, 16, 17, and 18, 1894.

(Continued from p. 560.)

Third Day—May 17.

Morning Session.

The opening paper was the annual "Address in Hygiene," by Dr. J. H. Wilson, of Beaver. Preventive medicine, he said, had done more for humanity than had any other department of medical science. That cholera did not recently gain a foothold in this country and that yellow fever was stamped out when it had appeared, were both due to the labors of hygienists. He called attention to the dangerous custom in our public schools of passing books and pencils from one scholar to another, and urged that it be abolished. Diphtheria and other contagious diseases may thus be transmitted. He urged upon physicians the importance of instructing their patients in the value of personal cleanliness. In regard to pulmonary tuberculosis, he said that 165,500 persons, or 450 a day, die annually of that disease in this country. The premises vacated by a tuberculous patient should be disinfected, and the people taught that tuberculosis is not hereditary but is contagious.

Dr. Wm. P. Munn, of Denver, Colorado, spoke of the system of inspection practised in Denver houses in which contagious diseases had occurred. The records of the houses are preserved, and renters of houses may on application learn the previous history of any house in question as preserved in the Health-department. This practice insures the keeping of the houses in proper sanitary condition.

The remainder of the morning session was devoted to a study of tuberculosis in its various aspects.

Dr. A. M. Cooper, of Point Pleasant, read a paper on the "Contagious Aspect of Tuberculosis in Married People," as viewed from an experience of thirty-eight years. He adhered to the hereditary theory in regard to the etiology of the disease, and is a non-believer in the contagious theory. He quoted a series of over fifty instances of death in married persons without any immediate deleterious effect upon the surviving husband or wife.

Dr. Lawrence F. Flick, of Philadelphia, read a paper on "Prophylaxis in the Treatment of Tuberculosis," which is to appear in a future number of The Medical News.

Dr. Thomas J. Mays, of Philadelphia, read a paper on the "Strychnin Treatment of Pulmonary Consumption." He considers strychnin as one of the most important of the therapeutic measures. He places in the treatment rest as the most important factor; secondly, nutritious food; and, thirdly, strychnin. Strychnin acts upon the nervous system, stimulating it in small doses. The proper dose should be that which will produce the greatest amount of stimulation. The patient should begin with comparatively small doses, $\frac{1}{32}$ grain by the mouth, given three or four times per diem, and gradually this should be increased. In some cases $\frac{1}{10}$ or $\frac{1}{6}$ grain may be taken. A child may take $\frac{1}{32}$ grain four times daily without detriment. The drug exerts an excellent effect upon the vomiting of phthisis and also upon the nervousness and sleeplessness. The dyspnea of pulmonary tuberculosis is primarily due to weakness of the nervous supply of the lungs. Strychnin will alleviate this condition. It tones up the weak heart and is of value in correcting the anemia of the disease.

Dr. William P. Munn, of Denver, Colorado, spoke on "Colorado Climate for Consumptives," saying that certain cases of tuberculosis of the lungs may recover spontaneously without being recognized or treated. The most essential element, both of assault and resistance, is environment, and especially is climate to be considered in this respect. The children of tuberculous parents do not develop the disease if placed in a high climate such as that of Colorado. Dryness, sunshine, purity of atmosphere, rarity of atmosphere, and an equable temperature are the beneficial elements of such an altitude.

"Notes, including those of Autopsy, of a Case of Tuberculous Meningitis" were presented by Dr. Daniel Longaker, of Philadelphia, after which the meeting was open for discussion upon the subject of tuberculosis.

Dr. S. S. Cohen, of Philadelphia, believed, with Dr. Munn, that pulmonary tuberculosis should be classed among the curable diseases. Acute miliary tuberculosis and phthisis florida, on account of their rapid course and general involvement, must for the present be excluded from the curable list. Drug treatment is necessary in all cases, but the best treatment is the hygienic, by teaching the patient how to properly inflate the lungs, or by giving inhalations of compressed air, or by causing expiration into rarefied air.

Dr. J. M. Anders, of Philadelphia, said that it is probable that the tubercle-bacillus does not multiply outside of the body. It survives the severest exposure and the most active chemical reagents, however. The modern asphaltum pavement increases the dust of the street and also the danger of infection; hence street-cleaning and street-sprinkling should be enforced. Most adults have at one time or other harbored the tubercle-bacillus; but only contract the disease when in a suitable condition for so doing. The subject of immunity

and what comprises it should be well studied. He urged the importance of an early recognition of the disease. The use of tuberculin will help in this.

DR. J. C. WILSON, of Philadelphia, considered pulmonary tuberculosis as preëminently a contagious disease, as much so as is scarlet fever, and that even there is a greater contagiousness and tendency to this disease than to scarlet fever. He thinks that perhaps the early lesions of the disease which have become obsolescent may confer an immunity.

DR. J. S. COHEN, of Philadelphia, called attention to the lessened mortality of pulmonary tuberculosis. Until the last ten or twelve years the disease caused from one-fourth to one-third of all the deaths in this city; now it causes between one-sixth and one-seventh of the deaths. He would suggest the use of mares' milk instead of cows' milk, as horses never contract tuberculosis. Spirituous liquors he claims may be dispensed with, as has been proved by a year of treatment without their use in the Home for Consumptives at Chestnut Hill.

DR. WILLIAM E. HUGHES, of Philadelphia, said that while exceedingly rare, tuberculosis may occur in horses. The natural immunity of the horse is quite distinct from acquired immunity. He urged the early recognition of the acute form of tuberculosis simulating croupous or broncho-pneumonia, and that form affecting serous membranes first, as the peritoneum or pleura.

The resolution offered on May 16th by DR. I. C. GABLE, relative to the appointment of an inspector to aid the State Board of Examiners, was adopted.

The Vice-President, DR. S. S. TOWLER, offered the following communication, which received unanimous indorsement:

The Medical Society of the State of Pennsylvania respectfully presents the following facts to the Judicial Council of the American Medical Association, and asks its action thereon:

The Trustees of the *Journal of the American Medical Association*, at the meeting of the Association in 1892, at Detroit, were directed to abstain from publishing in the advertising columns of the *Journal* advertisements of secret nostrums. Such advertisements are, however, still published in the *Journal*, in defiance of the resolution.

In the *Journal* of April 7, 1894, there is advertised a Sanitarium Association which openly offers stock to those physicians who will send patients to it for treatment.

In the opinion of the Medical Society of the State of Pennsylvania, these advertisements are improper and unethical, according to the letter and spirit of the Code of Ethics of the Association. The said Medical Society of the State of Pennsylvania, therefore, asks the Judicial Council to take such action in regard to the said Trustees as is demanded to sustain the integrity of the Association and enforce the provisions of its Code of Ethics.

A resolution offered by DR. FRANK WOODBURY, of Philadelphia, was adopted, calling upon the Medical Council and State Board of Health, in their official and other publications, to refrain from the use of any sectarian designation of the Board of Examiners representing this Society, of candidates coming up for examination from the regular schools, as the sectarian designation would imply a restricted practice of medicine.

The following were appointed a Committee on Legislation: Drs. I. C. Gable, York; R. B. Watson, Clinton; H. S. Orth, Dauphin; Alex. Craig, Lancaster; and C. W. Youngman, Lycoming.

DR. S. BIRDSALL, of Susquehanna, offered resolutions, which were adopted, approving of the bill now pending in Congress for the establishment of a National Bureau of Public Health in the Department of the Interior, as tending to promote the sanitary interests and general welfare of the country, and calling upon the Pennsylvania Senators and Representatives to give the bill their earnest and active support.

AFTERNOON SESSION.

The annual "Address in Ophthalmology" was delivered by DR. GEORGE E. DE SCHWEINITZ, of Philadelphia. He mentioned, in reviewing the progress in ophthalmology, the stricturotome of Dr. C. H. Thomas, of Philadelphia, as a valuable addition to the oculist's armature. He also strongly indorsed the action of the Ophthalmologic Section of the American Medical Association as to the prophylaxis of ophthalmia neonatorum. Over 70 per cent. of cases of blindness in infants are caused by the disease, and every effort should be made to secure the passage of such a law in Pennsylvania. He spoke of the uses and abuses of mercury in eye-disease, protesting against the needless use of this drug in incurable cases.

DR. S. LEWIS ZIEGLER, of Philadelphia, read a paper on the "Treatment of Corneal Ulcer by the General Practitioner." He said that corneal ulcer was common as an expression of the strumous diathesis. Chronic constipation, errors in diet, and poor hygiene are common causes. The danger to vision is due to the central location of the ulcer. The treatment should be applied both to the nose and to the eye. Local application of compound tincture of benzoin to the nasal mucous membrane is most essential. The eye-wash consists of sodium biborate, boric acid, camphor water, and distilled water. Hot stupes for fifteen minutes, three or four times daily, may be of service. The diet should be regulated, the bowels kept open, and the relaxed condition of the skin treated by daily baths in salt water, with massage.

DR. CHARLES P. NOBLE, of Philadelphia, read a paper on "Uterine Fibroids." He dwelt on the uncertainty of the spontaneous cure of fibroid tumors. The mortality of hysterectomy has been so greatly reduced that the operation is now almost as safe as the operation for the removal of the ovaries. He especially recommended the operation with intra-abdominal, but extra-peritoneal treatment of the stump as devised by Dr. Baer, of Philadelphia. The ligation of the uterine arteries has recently been suggested as a treatment of fibroid tumors. This has been done in the hope of bringing about atrophy of the tumor. Ergot and electricity in the treatment of the tumors have failed. He believes in removing fibroid tumors as soon as discovered, to avoid the possibility of pregnancy and years of invalidism.

DR. MASSEY, of Philadelphia, contended that the mortality of hysterectomy is far greater than that of fibroid tumors left alone. He said that electricity is not used to cause disappearance of the tumor, but to produce a symptomatic cure to arrest the growth and to cause retrogression in its size.

Dr. J. M. Fisher, of Philadelphia, called attention to the danger of stirring up a latent pyosalpinx or other grave condition by the use of electricity. He had used electricity, and had found the tumor cease to grow under its use, but he had noticed that when its use was discontinued growth was resumed. In operating for hysterectomy he favors packing the vagina with gauze to lift the tumor from the pelvis.

Dr. W. E. Ashton, of Philadelphia, doubts whether electricity has any effect on the tumors except to control to a certain extent the hemorrhage. He claimed that it was impossible to tell whether or not there was a coexistent tubal disease, and as this was a common complication, electricity should be absolutely contra-indicated in any case. The extra-peritoneal method of treatment of the stump gave rise to danger of hernia, and prolonged convalescence from gangrene of the stump.

The newly-elected President, Dr. John B. Roberts, of Philadelphia, was introduced by Dr. McCormick, the retiring President. After expressing his appreciation of the honor conferred upon him, Dr. Roberts announced the following as the speakers on various topics for the next meeting, in Chambersburg: Obstetrics, Dr. W. B. Ulrich; Surgery, Dr. C. S. Stevens; Medicine, Dr. I. C. Gable; Hygiene, Dr. Hildegarde H. Longsdorf; Mental Diseases, Dr. F. X. Dercum; Otology, Dr. L. H. Taylor.

CORRESPONDENCE.

THE TREATMENT OF CONFLUENT VARIOLA.

To the Editor of The Medical News,

Sir: I desire to offer the profession through your columns a suggestion upon the treatment of confluent variola.

With a camel's-hair brush paint a large surface, preferably the back, with ichthyol (ammonium sulphoichthyolate), completely coating the surface treated. After permitting it to dry a while, or immediately if necessary, cover with absorbent cotton and permit the patient to lie down, thus pressing the material tightly against the surface, without soiling the bedding.

In a few days the ointment and cotton will peel off, leaving the surface dry. The remedy appears to destroy the microörganism. It lowers temperature, controls itching, lessens nervousness, and slows pulse and respiration when applied during the stage of secondary absorption, which is frequently so fatal. My observations were made upon a few cases in the Chicago Pesthouse.

Very truly yours,

S. W. Burson.

Chicago, Ill.

THE FIN DE SIÈCLE SURGEON.

A Rambling Lay, by One of the Laity.

Let others sing of the gentle spring, in the old familiar way,
With its robins and moons, its sighs and its spoons, its skies of blue and gray;
My muse shall refrain from this hackneyed strain—let progress my watchword be!
I 'll a tale unfold of the surgeon bold of the end of the centuree.

In olden days, when *in medias res* an egregious pain appeared,
When mysterious lumps and peculiar humps their crests in defiance reared,
The things were few that the doctor could do to subdue either growth or gripe,
But to ply with lotions and pills and potions of the good old "business" stripe.

Though bravely he fought, he could work on naught but a theoretical plan,
Nor form, as do we, an intimacy with the patient's innermost man.
In this later age we have grown so sage that few things occasion surprise,
But the doctor's pace in the modern race we view with wondering eyes.

With his knife so true, and his theories new of microbes and spores and germs,
With electric blaze, antiseptic ways, and astonishing technical terms,
He leads in the van, and his fellow-man for concealment hasn't a chance.
He is read like a book, and no innermost nook is hid from that eagle glance.

If there's cause to suspect any ill effect produced by unseemly meals,
The modern M.D. doesn't wait, not he, to ask how his patient feels,
Nor to hear him state what he thinks he ate—but without any useless fuss
He lets down a string with a bucket-like thing, and samples his contents—thus!

Into dark recesses which baffle guesses he pokes his 'scope with a grin,
Then turns on the light, and the luckless wight "all glorious is within."
When intestine strife makes a burden of life, and obstructionist lumps prevail,
Though the case be grave, to the surgeon brave there is no such word as fail.

With a wide incision and free division he charges upon the foe,
Takes what he thinks best, and puts back the rest in the place where it ought to go.
In a half-way measure he takes no pleasure, so fits out his man beside
With the latest in rings, nickel buttons, and springs, and sutures him up with pride.

In cases of fits which puzzle our wits, or in any queer brain mishap,
The troubled scenes he inspects by means of an osteoplastic flap;
Brain centers he wakes with galvanic quakes to aid his investigation—
All is clear to his sight by the modern light of cerebral localization.

He removes large hunks, or neat little chunks, as the needs of the case demand;
If the patient is dull from too small a skull, he gives it a chance to expand.
If a leg or an arm be a source of alarm, the surgeon, no whit dismayed,
Takes the matter in hand, with his skewers and band, and a sweep of his glittering blade.

But I fear that my song is becoming too long—achievements so many and great
Cannot be reviewed in a fashion so crude, and I'll just be content to state
That whatever's to blame in this mortal frame, wherever the source of ill,
He cannot be caught, he's ready for aught that challenges nerve and skill.

And if a condition defy recognition, with neatness and brilliant despatch,
He describes the same, he concocts a name, and a brand new "method" to match.
Intrepid and sage, the flower of his age, a marvel of marvels he—
Both fame and gold gets the surgeon bold at the end of the centuree!

C. ROCKWELL.

NEWS ITEMS.

Meetings of Philadelphia Medical Societies:

	Meets.	Next meeting.
College of Physicians,	1st Wednesday, Sept.—June.	June 6
County Medical Society,	2d and 4th Wednesdays, Sept.—June.	June 13
Obstetrical Society,	1st Thursday, Sept.—June.	June 7
Pathological Society,	2d and 4th Thursdays, Sept.—June.	June 14

Meetings of State and National Medical Societies:

	Meets.	Next meeting.
American Academy of Medicine.	Aug. 29, 30	Jefferson, N. H.
American Association of Genito-urinary Surgeons.	May 29–June 1	Washington, D. C.
American Association of Obstetricians & Gynecologists.	Sept. 19–21	Toronto, Ont.
American Climatological Association.	May 29—June 1	Washington, D. C.
American Dermatological Association.	May 29–June 1	Washington, D. C.
American Electro-therapeutic Association.	Sept. 25–27	New York City.
American Gynecological Society.	May 29–31	Washington, D. C.
American Laryngological Association.	May 30–June 1	Washington, D. C.
American Medical Association.	June 5	San Francisco, Cal.
American Medico-Psychological Association.	June 13, 1895	Denver, Col.
American Neurological Association.	May 29—June 1	Washington, D. C.
American Ophthalmological Society.	May 30, 31	Washington, D. C.
American Orthopedic Association.	May 29–June 1	Washington, D. C.
American Otological Society.	May 29	Washington, D. C.
American Pediatric Society,	May 29–June 1	Washington, D. C.
American Physiological Society.	May 29–31	Washington, D. C.
American Surgical Association.	May 29–June 1	Washington, D. C.
Association of American Anatomists.	May 29–June 1	Washington, D. C.
Association of American Medical Colleges.	June 6	San Francisco, Cal.
Association of American Physicians.	May 29–June 1	Washington, D. C.
Association of Military Surgeons of the United States.	May, 1895	Buffalo, N. Y.
British Medical Association.	July 31–Aug. 3	Bristol, Eng.
Canadian Medical Association.	September	St. John, N. B.
Colorado State Medical Society.	June 19–21	Denver, Col.
Indian Territory Medical Association.	June 12	Claremore, I. T.
International Congress of Hygiene and Demography.	Sept. 2–9	Budapest, Austria.
International Congress of Ophthalmology.	August 7–10	Edinburgh, Scotland.
Kentucky State Medical Society.	June 6–8	Shelbyville, Ky.
Louisiana State Medical Society.	May 29	New Orleans, La.
Maine Medical Association.	June 13	Portland, Me.
Massachusetts Medical Society.	June 12, 13	Boston, Mass.
Medical Society of the State of California.	April 16, 1895	San Francisco, Cal.
Medical Society of Delaware.	June 12	Lewes, Del.
Medical Association of Georgia.	April 17, 1895	Savannah, Ga.
Medical Society of New Jersey.	June 26, 1894	Lake Hopatcong, N. J.
Medical Society of the State of New York	Feb. 5, 1895	Albany, N. Y.
Medical Society of the State of Pennsylvania.	May 21, 1895	Chambersburg, Pa.
Medical Society of the State of Tennessee.	April 9, 1895	Nashville, Tenn.
Medical Society of Virginia.	October.	Richmond, Va.
Medical Society of West Virginia.	July.	Berkeley Spgs. W. Va.
Medico-Legal Society.	Dec. 12	New York.
Minnesota State Medical Society.	June 20–22	St. Paul, Minn.
Mississippi Valley Medical Association.	Nov. 20–23	Hot Springs, Ark.
New Hampshire Medical Society.	June 18, 19	Concord, N.H.
New Mexico Medical Society.	September.	Albuquerque, N. M.
New York State Medical Association.	October 9–11	New York City
Ohio State Medical Society.	May 15, 1895	Columbus, O.
Ontario Medical Association.	June 6	Toronto, Can.
Oregon State Medical Society	June	Portland, O.
Rhode Island Medical Society.	June 7	Providence, R. I.
South Dakota State Medical Society.	June 13	Huron, S. D.
Texas State Medical Society.	April 23, 1895	Dallas, Tex.
Tri-State Medical Society.	October 9	Atlanta, Ga.
Vermont State Medical Society.	October 11, 12	Montpelier, Vt.

The Prevention of Tuberculosis.—The New York Board of Health has issued a circular of information to physicians regarding the measures adopted by the Board for the prevention of tuberculosis in the City of New York.

The Department will hereafter register the name, address, sex, and age of every person suffering from tuberculosis in the city of New York, so far as such information can be obtained, and respectfully requests that hereafter all physicians forward such information on the postal cards ordinarily employed for reporting cases of contagious disease. This information will be solely for the use of the Department, and in no case will visits be made to such persons by the inspectors of the Department, nor will the Department assume any sanitary surveillance of such patients, unless the person resides in a tenement-house, boarding-house, or hotel, or unless the attending physician requests that an inspection of the premises be made; and in no case in which the person resides in a tenement-house, boarding-house, or hotel will any action be taken if the physician requests that no visits be made by inspectors, and is willing himself to deliver circulars of information, or furnish

such equivalent information as is required to prevent the communication of the disease to others.

When the Department obtains knowledge of the existence of cases of pulmonary tuberculosis in tenement-houses, boarding-houses, or hotels (unless the case has been reported by a physician and he requests that no visits be made), inspectors will visit the premises and family, will leave circulars of information, and instruct the person suffering from the disease and the family as to the measures which should be taken to guard against its spread, and, if it is considered necessary, will make such recommendations for the cleansing or renovation of the apartment as may be required to render it free from infectious matter.

In all cases in which it comes to the knowledge of the Department that premises which have been occupied by a tuberculous person have been vacated by death or removal, an inspector will visit the premises and direct the removal of infected articles, such as carpets, rugs, bedding, etc., for disinfection, and will make such written recommendations to the Board as to the cleansing and renovation of the apartment as may be required. An order embodying these recommendations will then be issued to the owner of the premises, and compliance with this order will be enforced. No other persons than those there residing at the time will be allowed to occupy such apartments until the order of the Board has been complied with. Infected articles, such as carpets, rugs, etc., will be removed by the Department, disinfected, and returned, without charge to the owner.

For the prevention and treatment of pulmonary tuberculosis it becomes of vital importance that a positive diagnosis shall be made at the earliest possible moment, and that the value of bacteriologic examinations of the sputa for this purpose may be at the service of physicians in all cases not under treatment in hospitals, the Department is prepared to make such bacteriologic examinations for diagnosis, if samples of the sputa, freshly discharged, are furnished in clean, wide-necked, stoppered bottles, accompanied by the name, age, sex, and address of the patient, duration of the disease, and the name and address of the attending physician. Bottles for collecting such sputa, with blank forms to be filled in, can be obtained at any of the drug-stores now used as stations for the distribution and collection of serum-tubes for diphtheria-cultures. After the sputum has been obtained, if the bottle, with the accompanying slip filled out, is left at any one of these stations, it will be collected by the Department, examined microscopically, and a report of the examination forwarded to the attending physician, free of charge.

The authorities of all public institutions, such as hospitals, dispensaries, asylums, prisons, homes, etc., will be required to furnish to the Department the name, sex, age, occupation, and last address of every tuberculous patient coming under observation within seven days of such time.

Circulars of information for the general public have been issued in English, German, Italian, and Hebrew.

The Philadelphia Board of Health has not deemed it wise to go so far as the New York Board. It has, however, issued a circular detailing the most important means of preventing the spread of tuberculosis, and volunteers to undertake the disinfection of rooms that have been occupied by tuberculous patients, and of beds, bedding, carpets, etc., upon notice sent to the Health Officer, at City Hall.

The American Neurological Association will hold its twentieth annual meeting at Washington, D. C., on May 29, 30, 31, and June 1, 1894. The following program is announced:

"Report of a Case of Spinal Syphilis and One of Intracranial Syphilis, with Microscopic Specimens," by Landon Carter Gray, New York. "Merycism," by William A. Hammond, Washington, D. C. "Inebriety as a Disease Analytically Studied," by R. M. Phelps, Rochester, Minn. "A Case of Myxedema treated with Sheep's Thyroid," by Samuel Ayres, Pittsburg. "Craniectomy in a Child Two Years Old," by Samuel Ayres, Pittsburg. "The Genesis of Hallucinations, Illusions, and Delusions," by H. A. Tomlinson, St. Peter. "A Case of Pontine Embolism, with Paralysis of Ocular and of Orbiculo-palpebral Movements of One Side and of the Limbs on the Other, with Remarks on Focal Lesions in the Pons," by Charles K. Mills and John Zimmer, Philadelphia. "Thyroidectomy in a Case of Graves's Disease," by J. Arthur Booth, New York. "Crossed Knee-jerks." by Guy Hinsdale and J. Madison Taylor, Philadelphia. "The Insanity of Puberty and Adolescence," by Henry R. Stedman, Boston. "Lumbar Puncture (Quincke) for the Withdrawal of Cerebro-spinal Fluid," by William Browning, Brooklyn. "Gastro-intestinal Neurasthenia, *i. e.*, Nervous Dyspepsia," by Leonard Weber, New York. "Some Problems Relating to the Cerebral Fissures," by Burt G. Wilder, Ithaca. "Exhibition of a Suicide's Brain, with Two Pistol-ball Wounds," by Burt G. Wilder, Ithaca. "Exhibition of a Neurological Percussion Hammer," by William C. Krauss, Buffalo. "Cerebral Edema," by George J. Preston, Baltimore. "The Non-operative Treatment of Metatarsalgia," by V. P. Gibney, New York. "A Case of Exophthalmic Goiter cured by Thyroidectomy," by Frederick Peterson, New York. "Cerebral Hemorrhage: Notes on its Cause and Premonitory Symptoms," by Charles L. Dana, New York. "The Cortical Localization of the Cutaneous Sensations," by Charles L. Dana, New York. "Exhibition of Sections from the Mid-brain, Pons, Medulla Oblongata, and Spinal Cord, from a Case of Chorea," by James Hendrie Lloyd, Philadelphia. "Report of a Case of Amyotrophic Lateral Sclerosis in a Child," by Charles Henry Brown, New York. "The Significance of the Exaggerated Knee-jerk and Ankle-clonus and their Relation to Diagnosis," by Graeme M. Hammond, New York. "A Case of Congenital Hydrencephalocele," by Edward B. Angell, Rochester. "A Case of Infantile Hemiplegia, Imbecility, and Epilepsy; Craniotomy; Marked Improvement," by Edward B. Angell, Rochester. "Experimental Investigations of the Physical and Chemical Action of the Galvanic Current upon the Living Organism," by George W. Jacoby and F. Schwyzer, New York. "Report of a Case of Diffuse Myelitis following Spastic and Choreic Symptoms of Three Years' Duration; with Specimens," by F. X. Dercum, Philadelphia. "Traumatism as a Cause of Locomotor Ataxia; a critical examination of the evidence, including a Report of Three Cases," by Morton Prince, Boston.

The American Climatological Association will hold its eleventh annual meeting at Washington, D.C., May 29, 30, 31, and June 1, 1894. The program includes the following papers:

"Alimentation in Pulmonary Disease," address by the President, Andrew H. Smith, New York. "The Relation which Alimentation should bear to Oxygenation in Lung Diseases," by Boardman Reed, Atlantic City. "The Methods and Value of Supervised Exercises and Diet in the Prophylaxis of Pulmonary Phthisis," by Glentworth R. Butler, Brooklyn. "The Importance of Mouth Cleanliness in the Prevention of Disease," by Clarence C. Rice, New York. "A Plea for the Earlier Recognition of Pulmonary Tuberculosis and Adoption of Proper Climatic Treatment," by H. B. Moore, Colorado Springs. "Three Years' Experience in the Sanitarium Treatment of Pulmonary Disease, near Boston," by Vincent Y. Bowditch, Boston. "Creosote, Guaiacol, and Benzoyl of Guaiacol in Phthisis," by Roland G. Curtin, Philadelphia. "Shall Anything be Done by Legal Authority to Prevent the Spread of Tuberculosis," by Frederick I. Knight, Boston. "Further Report of Cases of Phthisis treated at Colorado Springs," by S. E. Solly, Colorado Springs. "The Condition of the Heart in Diabetes and its Relation to Diabetic Coma," by Leonard Weber, New York. "Report of Cases of Chronic Heart Disease treated by the Schott Method of Baths and Gymnastics," by Robert H. Babcock, Chicago. "A New and Distinguishing Sign of Latent Aneurysm of the Aorta," by W. C. Glasgow, St. Louis. "Musical Nomenclature in Physical Diagnosis," by J. Hilyard Tyndale, New York. "Ozone in Phthisis, with Special Reference to the Pneumatic Cabinet," by Chas. E. Quimby, New York. "The Comparative Rarity of Phthisis in the Highlands of Pennsylvania and the Adjacent Counties of New York," by Guy Hinsdale, Philadelphia, "Meteorological Data of Colorado," by Samuel A. Fisk, Denver. "Sensible Temperatures," by Hon. Mark W. Harrington, Chief of Weather Bureau, Washington. "Beri-beri," by Judson Daland, Philadelphia. "Some Practical Observations on So-called Malaria," by William H. Daly, Pittsburg. "The Shock of Acute Disease," by John H. Musser, Philadelphia. "The Physical Signs of Cellular Edema of the Lung considered in their Relation to the Pathological Changes," by W. C. Glasgow, St. Louis.

The American Ophthalmological Society will hold its thirtieth annual meeting on the 30th and 31st of May, at Washington, D. C., in connection with the third triennial session of the Congress of American Physicians and Surgeons. Titles of papers to be read have been received as follows: "Two Recent Magnet Operations; one an Ideal Success, the other a Total Failure," by H. Knapp. "A Demonstration of some Photo-micrographs of the Human Retina," by William F. Norris. "The Practical Value of the Ophthalmometer," by Edward Jackson. "Family History of Irideremia and Coloboma Iridis; Cataract Operation on Two Members," by D. De Beck. 1. "A Clinical and Microscopic Study of Two Cases of Glaucoma associated with Intra-ocular Hemorrhages;" 2. "Some additional Studies on the Clinical Value of repeated Careful Correction of Manifest Refractive Error in Plastic Iritis," by C. A. Oliver. "Tumor of the Optic Nerve," by Swan M. Burnett. 1. "Degeneration in the Retinal Vessels, with Hemorrhages in the Retina and Vitreous in Gouty Patients;" 2. "Recent Experiences in the Treatment of Detachment of the Retina," by C. S. Bull. "Pseudo-erysipelas Periocularis Medicamentosa," by Edward Fridenberg. 1. "Some Typical Examples of Subnormal Accommodative Power;" 2. "The Ophthalmoscope does not always Reveal Latent Hypermetropia, with Notes of a Case;" 3. "A Case of Ophthalmitis Suppurativa following Discission of Capsular Opacity," by S. Theobald. "Removal of Steel from the Vitreous," by E. E. Holt. 1. "Colloid Disease in the Macular Region analogous in appearance to the so-called 'Drusen' in the Nerve-head;" 2. "Epithelioma of the Lid; Excision and Transplantation of the Skin without a Pedicle;" 3. "Concerning Monocular Diplopia, with Cases," by G. E. de Schweinitz. 1. "Two Cases of Sympathetic Inflammation;" 2. "A Portable Perimeter, with its Apology for Existence," by F. M. Wilson. "So-called Muscular Asthenopia," by G. W. Hale. "The Practical Value of Low-grade Cylinders," by J. A. White. "Results of Repeated Examinations of the Eyes of the Boys in the Penn Charter School of Philadelphia," by B. A. Randall. "Foreign Bodies in the Orbital Cavity," by W. B. Johnson. "Rupture of the Lymph-sheath of a Retinal Vein," by A. G. Heyl.

The Association of American Anatomists will hold its sixth annual session, May 29, 30, 31, and June 1, 1894, at Washington, D. C., in connection with the Congress of American Physicians and Surgeons, of which this Association is a constituent member.

The following papers are to be read:

"Morphology as a Factor in the Study of Disease," by Harrison Allen, Philadelphia. The discussion will be led by Thos. Dwight, Frederick H. Gerrish, Frank Baker, Burt G. Wilder. "A Plea for a Methodically-written Text-book on Anatomy," by Edmond Souchon, New Orleans. "In our Two Years' Study of Anatomy, what part of the Subject should be Covered in the First Year's Work? What Part in the Second?" by A. D. Bevan, Chicago. "Identity of Structure of Protoplasm with that of Striped Muscle," by Carl Heitzmann, New York City. "Study of the Human Cranium," by Harrison Allen. "Relation of the Olfactory to the Cerebral Portion of the Brain," by Burt G. Wilder. "On the Shortening of the Face-axis in the Evolution of the Mammalia," by Harrison Allen. "Theoretical Anatomy of the Sympathetic System," by Wm. P. Carr, Washington, D. C. "Terminology of the Nerve-cell," by Pierre A. Fish, Ithaca, N. Y. "Methods of Estimating the Height from Parts of the Skeleton," by Thos. Dwight. "A Study of the Muscular Tunic of the Large and Small Intestine of Man in the Region of the Cecum," by Robert Orton Moody, Yale University. "A Note on the occurrence of the Scapulo-clavicular Muscle," by Mr. Moody. "The Female External Genital Organs: a Criticism on Current Anatomical Description," by D. S. Lamb, Washington, D. C. "Perineum and Perineal Body," by D. K. Shute, Washington, D. C. "Notes on the Anatomy of the Orang," by B. G. Wilder.

The American Surgical Association will hold its annual meeting at Washington, D. C, May 29, 30, 31, and June 1,

1894. In addition to those already announced (NEWS, March 17, p. 300), the following papers are to be read:

"The Surgical Treatment of the so-called Surgical Kidney," by R. F. Weir, New York. "Surgery of the Ureters," by Christian Fenger, Chicago. Discussion by M. H. Richardson, H. H. Mudd, C. H. Mastin, and Ford Thompson. By invitation: "Treatment of Malignant Tumors with the Toxins of Erysipelas," by William B. Coley, New York. "Hernia," by W. T. Bull, New York. "Cases of Extra-uterine Pregnancy, with Remarks," by M. H. Richardson, Boston. "Venous Tumor of the Diploë," by L. S. Pilcher, Brooklyn. "A Case of Strangulation of Meckel's Diverticulum, caused by Volvulus of the Ileum; Operation; Death," by J. W. Elliot, Boston. By invitation: "Bone-grafting in Ununited Fractures, by a New Method," by A. M. Phelps, New York. "Mooted Points as to Fractures of the Arm, with Notice of an improved Splint," by J. McFadden Gaston, Atlanta, Ga. "The Removal of Stone in the Bladder, with the Presentation of a new Lithotrite," by W. S. Forbes, Philadelphia. "Extirpation of the Larynx," by W. H. Carmalt, New Haven, Conn. "Abscess of the Thyroid Gland," by Joseph Ransohoff, Cincinnati.

The Association of American Medical Colleges.—At the fifth annual meeting of the Association of American Medical Colleges at San Francisco on June 6, 1894, the Barnes Medical College, of St. Louis, will present a resolution that, in order to afford to the teacher and student alike, such time as is necessary to complete a proper curriculum in each department of medicine, of all regular medical students who intend graduating at the Barnes Medical College at the close of the session of 1899 and 1900, and in all subsequent classes, four years' medical study and attendance upon four regular courses of medical and clinical lectures of not less than five months each shall be required; provided, that graduates of literary colleges, who have taken a course of scientific study, graduates of schools of pharmacy, and graduates of schools of dental surgery, may be admitted to the second year's work and course of lectures without examination. The delegate of the Barnes Medical College to the meeting of the Association is instructed to vote upon all questions arising before that body, in accordance with the foregoing resolution, and to use all honorable means to secure the unanimous adoption, by all colleges, of requirements for graduation of students, of four regular courses of lectures of not less than five months each in different years.

State Board of Medical Examiners of New Jersey.—A special meeting of this Board for the examination of candidates desiring to practise medicine in this State will be held in the Capitol at Trenton, on the third Tuesday of June (the 19th), *and it will be the last meeting for the examination of candidates held under the present medical law*, as the new law enacted at the recent session of our Legislature goes into effect July 4, 1894. This new law requires all candidates to have a competent common school education, to be graduates in medicine and surgery, which they shall have studied at least four years, and upon which they shall have taken three full courses of lectures, before they can be admitted to the examination for a license, and then all will be subjected to the same examination; it also empowers the Board to accept, in lieu of an examination, the certificates of other State Examining and Licensing Boards having similar requirements.

The Meeting of the American Medical Association.—The entire work of the Association meeting in San Francisco, June 5th to 8th, inclusive, will be done in Odd Fellows' Building, corner Market and Seventh Streets.

Registration will begin in Marble Hall, Palace Hotel, on Monday, June 4th, when all who arrive early enough should register to avoid the rush on Tuesday. Working hours of the Sections will be 9 to 12 and 2 to 5, except forenoon of the first day.

The General Assembly will convene at 10 o'clock, on Tuesday.

Visitors desiring to engage rooms in advance can do so by communicating directly with the hotels, or with R. A. McLean, No. 305 Kearney Street, Chairman Committee on Hotels. Headquarters at the Palace Hotel.

Railroad tickets will be good for return till July 15th. Members will therefore have time to make numerous side excursions in the State after the meeting.

The Medical Association of Georgia adheres to the Code.—At the late meeting of the Medical Association of Georgia Dr. J. McFadden Gaston, of Atlanta, introduced the following resolution, which was unanimously adopted:

"*Whereas*, The American Medical Association at its last meeting provided for an expression in regard to the Code of Ethics from the different State Associations, to be laid before the forthcoming meeting at San Francisco, it is hereby

"*Resolved*, That the Medical Association of Georgia reasserts its adoption of, and conformity to, the Code of Ethics of the American Medical Association, as heretofore recognized by that body, and authorizes this record of its adherence to the same."

The Transactions of the Pan-American Medical Congress.—The *Proceedings of the First Pan-American Medical Congress* were compiled by the Secretary-General, Dr. Charles A. L. Reed, and transmitted to the Department of State in November, 1893. By recent joint resolution of the Senate and House of Representatives the manuscript was transmitted to Congress, and a concurrent resolution has been adopted directing the Public Printer to print the same. The manuscript is now in the office of the Public Printer, and will be put to press at once under the supervision of the Editorial Committee, of which Prof. John Guitéras, of Philadelphia, is the chairman.

The Wistar Institute of Anatomy and Biology of the University of Pennsylvania was formally opened on May 21st. The keys were presented by the Assistant Director, Dr. Milton J. Greenman, to the Provost, Dr. Pepper, who made an address appropriate to the occasion. Dr. William Osler also delivered an address. Prof. Libby, of Princeton, made some congratulatory remarks, and the Director of the Institute, Dr. Harrison Allen, made the concluding address, after which the building and its appurtenances were inspected.

Mr. Charles C. Harrison, already well known for his great interest in the University of Pennsylvania, has been elected Provost in succession to Dr. Pepper. The acceptance is only provisional, but it is hoped that Mr. Harrison can be induced to retain permanently the important trust.

Dr. Adam Politzer, the distinguished otologist of Vienna, and hitherto Extraordinary Professor of Otology in the University of Vienna, has been made an ordinary professor.

New York State Medical Reporter is the name of a new "monthly journal of medicine and surgery," edited by Dr. H. Bronson Gee, and published at Rochester, N. Y.

The Archives of Pediatrics will, with the July issue, be edited by Dr. Dillon Brown. Exchanges should be addressed: Editor, *Archives of Pediatrics*, 40 East 57th Street, New York.

Dr. Karl Stoerk has been made Ordinary Professor of Laryngology in the University of Vienna.

Dr. Malassez has succeeded Charcot in the chair of Pathological Anatomy in the University of Paris.

Dr. Joseph Gruber has been made Ordinary Professor of Otology in the University of Vienna.

Books and Pamphlets Received.

Venereal Memoranda. A Manual for Students and Practitioners. By P. A. Morrow, A.M., M.D. New York: William Wood & Co., 1894.

The Commoner Animal Parasites of the Skin. By A. H. Ohmann-Dumesnil, A.M., M.D. Reprinted from the St. Louis Medical and Surgical Journal, 1893.

The National Dispensatory. Containing the Natural History, Chemistry, Pharmacy, Actions, and Uses of Medicines, including those Recognized in the Pharmacopeias of the United States, Great Britain, and Germany, with Numerous References to the French Codex. By Alfred Stillé, M.D., LL.D.; John M. Maisch, Phar.D.; Charles Caspari, Jr., Ph.G.; and Henry C. C. Maisch, Ph.G., Ph.D. Fifth edition. Philadelphia: Lea Brothers & Co., 1894.

Seven Amputations at the Hip-joint. By W. L. Estes, M.D. Reprinted from the Lehigh Valley Medical Magazine, vol. v, No. 2.

The Modern Climatic Treatment of Invalids with Pulmonary Consumption in Southern California. By P. C. Remondino, M.D. The Physician's Leisure Library. Detroit: George S. Davis, 1893.

A Further Study of Hysterical Cases and their Fields of Vision. By John K. Mitchell, M.D., and G. E. de Schweinitz, M.D. Reprinted from the Journal of Nervous and Mental Disease, 1894.

Glaucoma. By James Wallace, M.D. Reprinted from the University Medical Magazine, 1893.

Gonorrheal Ophthalmia. By James Wallace, M.D. Reprinted from the University Medical Magazine, 1894.

Eye-Paralyses. By John Amory Jeffries, M.D. Reprinted from the Boston Medical and Surgical Journal, 1892.

Transactions of the Texas State Medical Association. Twenty-fifth Annual Session. Galveston: Knapp Bros., Printers and Publishers, 1893.

Analysis of One Hundred and Thirty-three Cases of Hernia Operated upon for the Purpose of Radical Cure. By Henry O. Marcy, A.M., M.D., LL.D. Reprinted from the Journal of the American Medical Association, 1893.

Medical Report of the Philadelphia Dispensary for Skin Diseases, covering a period of Ten Years. By Henry W. Stelwagon, M.D. Pamphlet. 1893.

Transactions of the American Gynecological Society. Vol. XVIII. For the year 1893. Philadelphia: Wm. J. Dornan, Printer, 1893.

The Modern Eye, with an Analysis of 1300 Errors of Refraction. By W. F. Southard, A.M., M.D. Reprinted from the Pacific Medical Journal, 1893.

Brain-preservation, with a *Résumé* of some Old and New Methods. By Pierre Augustine Fish, B.S. Reprinted from the Wilder Quarter-Century Book, 1893.

Some Practical Experiences with Muscular Anomalies. By T. E. Murrell, M.D. Reprinted from the Journal of the American Medical Association, 1893.

A New Method of Direct Fixation of the Fragments in Compound and Ununited Fractures. By Nicholas Senn, M.D., Ph.D., LL.D. Reprinted from the Annals of Surgery, 1893.

An Outline of the Embryology of the Eye, with Illustrations from Original Pen Drawings by the Author. By Ward A. Holden, A.M., M.D. The Cartwright Prize Essay for 1893. New York: G. P. Putnam's Sons, 1893.

A Manual of Diseases of the Nervous System. By W. R. Gowers, M.D., F.R.C.P., F.R.S. Second edition, revised and enlarged. Vol. II. Philadelphia: Blakiston, Son & Co., 1893.

International Clinics: A Quarterly of Clinical Lectures on Medicine, Neurology, Pediatrics, Surgery, Genito-urinary Surgery, Gynecology, Ophthalmology, Laryngology, Otology, and Dermatology. By Professors and Lecturers in the Leading Medical Colleges of the United States, Great Britain, and Canada. Edited by John M. Keating, M.D., LL.D.; Judson Daland, M.D.; J. Mitchell Bruce, M.D., F.R.C.P.; and David W. Finlay, M.D., F.R.C.P. Vol. III. Third series. Philadelphia: J. B. Lippincott Company, 1893.

The Narrative of a Busy Life. An Autobiography. By Arthur Hill Hassall, M.D. London and New York: Longmans, Green & Co., 1893.

State Asylum for Insane, Columbus, Ohio. Pathological Bulletin, No. 1. Report upon the Pathology of a Case of General Paralysis. By Professor C. L. Herrick. Issued September, 1893.

Retrospect, Aspect, and Prospect in Medical Science. By Professor A. B. Macallum. Reprinted from the Canadian Practitioner, 1893.

Scabies: Its Symptoms, Diagnosis, and Treatment. By J. Abbott Cantrell, M.D. Reprinted from the Therapeutic Gazette, 1893.

Bureau of Education. Circular of Information, No. 7, 1893. Statistics of Public Libraries in the United States and Canada. By Weston Flint, Statistician of the Bureau of Education. Washington: Government Printing Office, 1893.

New Truths in Ophthalmology as Developed by G. C. Savage, M.D. Thirty-two illustrations. Nashville, Tenn.: Printed at the Publishing House of the M. E. Church, South, 1893.

The Diseases of Childhood. (Medical.) By H. Bryan Donkin, M.D. New York: William Wood & Co., 1893.

U. S. Department of Agriculture. Bureau of Animal Industry, Bulletin No. 3. Miscellaneous Investigations concerning Infectious and Parasitic Diseases of Domesticated Animals. By F. L. Kilbourne, Veranus A. Moore, E. C. Schroeder, Theobald Smith, and C. W. Stiles. Washington: Government Printing Office, 1893.

Report of the Surgeon-General of the Army to the Secretary of War for the Fiscal Year ending June 30, 1893. Washington: Government Printing Office, 1893.

Fenocolla e Malaria. Memoria di A. Cicognani. Estratto dalla Rassegna Medica di Bologna, Anno 1893. Bologna: Prem. Tip. L. Andreoli, 1893.

Pyogenic Infective Diseases of the Brain and Spinal Cord. Meningitis, Abscess of Brain, Infective Sinus Thrombosis. By William MacEwen, M.D., Glasgow. New York: MacMillan & Co., 1893,

Annual Report of the Health Officer of the Port of New York for the Year 1892. Albany: James B. Lyon, Printer, 1893.

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ORIGINAL ADDRESSES.

MORPHOLOGY AS A FACTOR IN THE STUDY OF DISEASE.[1]

BY HARRISON ALLEN, M.D.,

DIRECTOR OF THE WISTAR INSTITUTE OF ANATOMY AND BIOLOGY OF THE UNIVERSITY OF PENNSYLVANIA.

NOT long ago I heard a gentleman congratulate a distinguished professor of Greek on the ground that the subject of Greek literature was finished, that is to say, was one to which from the nature of things no important additions could be expected. Any one not a special student of the classics might be justified in making such a remark. The professor replied that he was indeed to be congratulated, but not on the ground of being devoted to a subject whose limitations were known. He then spoke of important discoveries recently made in Greek texts found in Egyptian papyri and manuscripts used in the manufacture of mummy cases. These investigations had led to entirely new conceptions of the social life of the ancient Athenians and of the characters of some of their leading authors.

In like manner the anatomist who stands on the vantage-ground of medicine is often told that by the cultivation of the last four hundred years his subject is finished—that no new thing can be said of it. Whether or not the human anatomist is to be congratulated, being thus identified, is a matter of opinion. For my part, I venture the statement that no true anatomist would be content for a moment with a science thus limited. Were he so to accept it his energies would be necessarily confined to acquiring what his predecessors had secured in an equal degree. I am sure I represent my fellow-workers when I say that the science of anatomy is awaiting important advances—not indeed by unrolling the palimpsests of tombs, or by the maceration of mummy cases, but by new readings in the infinite book of Nature.

To the physician who is busy with the practical duties of his profession anatomy is the arrangement of the structures of the adult human body by the standard of undergraduate instruction. This anatomy may be well said to be limited in the sense that Procrustes measured a giant by the length of the bed he was stretched upon; the superfluous parts were lopped off to make a fit. The text-book assumes an ideal which is properly described. The facts that exceed this ideal, or otherwise disturb it, are ignored unless they are needed by the surgeon, when they are elaborated just so far as he may dictate. "Gentlemen," said Dr. Barclay, "Vesalius and his fellows were reapers in the great field of anatomy—John Hunter and his brethren were gleaners—and we, gentlemen, are the stubble-geese!" Presentation of the facts in this wise was as well known to the old worthies as they are to us—and yet we contend that moderns can be something better than "stubble-geese." Three sciences have appeared since the days of Vesalius and of Hunter—sciences so vast as to command the time and energies of distinct bands of workers: histology, which yet awaits the discoveries of new chemicals, of apparatus of precision, and of improved means of conservation, for yet greater triumphs; embryology, which, while long claimed by the physiologist, is returning to the anatomist as his rightful inheritance; and general morphology—the most important of the three—which embraces all animated structures as parts in a scheme of philosophy.

I have employed the word morphology, for morphology is anatomy writ large; as the heading under which my remarks may be included; as one least liable to misinterpretation; and I would place within it the subject of descriptive anatomy as a conventional and unimportant part.

I confess to a feeling of impatience that the science of anatomy is still commonly taught pretty much as it was a century ago, and I cannot refrain from expressions of regret that these methods have not undergone change even in the centers which have witnessed important revolutions in other departments. The demands of the surgeon still dominate the lecture-hall. No fact that cannot be used in the clinical amphitheater is thought to possess value; the forces for the education of the medical thinker and scholar are unused; the powers of observation of the practising physician are not stimulated; the outlines of method by which the science of morphology can be extended by experiments are unthought of; while the opportunities of accumulating at the hands of the physician materials to be used in the explanation of phenomena of organic structure acting perversely, or serving as the causes of diseased action, are neglected.[1]

It is true that these and similar facts are in the possession of advanced clinical workers, but they often

[1] Read before the Congress of American Physicians and Surgeons, at its meeting, Washington, May 29, 1894.

[1] Men who have no sympathy with anatomy and physiology are apt to declare that these sciences have no connection with clinical work, and are thus absolved from considering their claims. A physician interested in the study of speech-sounds, attempting to connect this study with clinical methods, is told by leading physicians that such work is not medical but physiological. Another physician photographs the larynx in the living individual and reports his work before the laryngological section of an international medical congress, when the chair expresses his opinion that such work is not worth the doing, at least that it is not laryngological. The medical man who rises on the floor of a medical society to use the facts of the shape of the thorax as an aid in the study of the predisposition to pulmonary tuberculosis is declared by the chairman to be out of order in a discussion of the etiology of that disease. A member of a pathological society who proposes to read a paper on the anatomy of the cerebrum in connection with localization of diseased action is crowded out by a combination of the members on the ground that a pathological society is a society of clinicians and not of anatomists.

appear under heads not suggestive of their exact position in knowledge. Many important considerations are scattered through hospital reports, treatises on practice, or the transactions of pathological societies. Sometimes they are veiled under misleading titles. The actions of muscles have been held to be always corollaries of the descriptions of the muscles themselves, indeed to be logical deductions from the formulæ of their origins, insertions, and nerve-supply. Yet these facts are wrested from anatomy under the name of physiology of movements. Such a classification would bear to physiology the relations which obtain between the structure of bone and the dynamics of the skeleton, the studies of the eruption and succession of the teeth and the rates of growth of organs. Teratology is generally cultivated by obstetricians, and, if students of medicine were taught this subject it is as likely as not that it would be undertaken by the Chair of obstetrics, and thus a purely morphological series of demonstrations be not credited to the department of anatomy.

It is evident that physicians who become interested in these and allied subjects obtain their knowledge, so far as it relates to the elucidation of medical problems, after their academic education is completed. Is it not entirely proper that they should be carefully instructed in them before graduation? Is it not patent that the difference between the imperfectly educated and the accomplished physician can be determined by the use of the test of being able to interpret morphological factors in the study of disease, as well as by any other test of efficiency?

Empirical knowledge never leads to true conceptions. The basis of just lines of association must be those established by nature. In a philosophical plan there is no such thing as a series of diseases in the sense of a sequence of organic entities except when these entities have been first established. In a word, diseases are not related to each other but to their causes. Etiology is the single factor that yields conditions which can correlate. Tissue-changes furnish truer guides than function-changes. A character is a more reliable datum than a trait. A description of an organ or part is a more acceptable contribution to knowledge of classification than that of a habit. In medicine we can, in like manner, say that a sign is better than a symptom, or, what is best of all, elaborate experimentation, combined with anatomical observations on the dead, is worth all that is possible from empirical observations on the living. In clinical work demonstrations are often lacking; tests may be absent. Indeed, the physician practically acknowledges that he never proves anything, as he refers his etiology to the chemist and the bacteriologist. I take the position that he should refer to the morphologist more problems than he is inclined to do.

It is acknowledged that chemical conditions underlie texture, and it is a matter to be regretted that the morphologist gains so little by this association of truths. Not, indeed, that the knowledge of chemical changes in tissue do not enter into his problems. He is well aware of the close connection between the chemical composition of teeth and their forms, of the great influence that the beginnings of calcification of the triangular cartilage of the nasal septum exert over the shapes of the nasal septum, as well as the immense range of changes initiated in gouty and rheumatic conditions. Exact relations are shown to exist between the chemical constitution of the fluids and the shapes of some of the organs. These changes, it is true, are often unimportant to the individual, are peripheral, and apparently of no special significance. But the general shape of the gouty tooth is, so far as it goes, distinctive, as also is the fact that the lower incisor teeth are altered slightly in their relations one to another. Sir Dyce Duckworth, in his treatise on gout, states that "buck-teeth" are not uncommon, one of the lower central incisors being thrust out of rank, as was first noticed by Laycock. I have observed these characters in a large number of cases, and am confirmed as to their correctness by dental surgeons.[1] Faget[2] believes that the teeth are especially noteworthy in persons of gouty habit. They are, as a rule, well developed, with strong, hard enamel, which is rather yellow in color. They resist decay, and are firmly set in their alveoli. In time they become more or less worn down, so that the pulp-cavities begin to be visible. Pye-Smith quotes the authority of Mr. Moore for the facts that this condition may be caused by that formation of jaws which gives an edge-bite, also in cases in which the enamel is thin on the summits of the teeth.

In like manner the nails, which are so closely associated with the teeth in all morphologic characters are of value in studying the gouty diathesis.[3] The nails, according to Duckworth (*l. c.*) "are observed to be coarse and fibrous, striated and fluted, or lined vertically, in gout. This peculiarity is well marked in most persons of the arthritic diathesis, and hence is found in rheumatic persons. The nail-substance is apt to grow thick and brittle, and especially so after attacks of gout. The nails may be shed after several local attacks. The transverse depressions, described by M. Beau and Dr. Wilks, are seen in due time after gouty as after other illnesses, indicating a temporary failure and depression of nutrition of the whole body. As an entire nail takes six months to grow, the site of these furrows indicates the date of the past illness with singular exactness. Sometimes a white line marks the attack."

If among wild animals varieties were found to vary as much among themselves as do gouty and non-gouty persons, zoölogists would be justified in defining therefrom subspecies. Why should not gout be defined as well by the results of the chemical compositions of the fluids as by these compositions themselves? Indeed, biological science teaches us that morphological data are the most reliable, and it were better to define gout and rheumatism by the peripheral characters, even if we do not derive therefrom any notable practical advantage.

So long as we study diseases, as distinguished from their causes and effects, we are empirical. We hear much of the "science of medicine." Surely it is a "so-called" science when it deals only with clinical phenomena. No medical center which is dominated by a clinical element (I am anxious here to recall that by clinical work is meant literally the bedside work, or its equivalent), the study of the patient rather than the

[1] See "The Characters of the Teeth in Persons of the Arthritic Diathesis." Journal of the Odontological Society of Great Britain, 1883, p. 193.

[2] Prin. and Prac. Med., second edition, 490.

[3] Two hundred years ago Sir Thomas Browne wrote that "tempermental dignotions and conjecture of prevalent humors may be collected from spots on our nails."

causes which evolved the patient (or the possible study of the body of the patient, if he should be so unfortunate as to die), can be said to be an empirical one, and history shows it to be singularly liable to be clouded by speculative opinion. I respectfully submit that the theories of the humorists, the solidists, or any one of the many theories which have agitated the profession (the hosts of spectral forms that surge up to the line of blood in the limbo of medical philosophy), would have been impossible had the system of medicine been broadly based upon morphological data. But such a basis was not feasible until the organic sciences were themselves formulated. The great reputation of Boerhaave rests upon his recognition of chemical and anatomical data as aids to the study of medicine. The amount of anatomical reading he recommended his pupils showed a knowledge of anatomy which has probably never been approached by any of the authorities in clinical medicine since his day.

The changes in the shape and composition and use of a part of an organism constitute a variation—that is to say, an exception to a rule which has been formulated concerning their shape, composition, or use. The detection of these variations, and the propositions upon which they are based, constitute one of the chief occupations of the morphologist.

The difficulty of proving the value of minute knowledge of the muscle-fibers of the body is very great, for anatomists so rarely have an opportunity of making the necessary demonstrations. Let me illustrate a few of the very probable etiological factors in such conditions as esophageal pouch and heart-failure. Esophageal pouch is a yielding of the muscle-wall of the pharynx as it joins the esophagus in individuals who possess an insufficient number of the circular fibers of the lower pharynx or the beginning of the esophagus, which will in rare instances have developed an invagination of mucous membrane at the line of fault. This is a simple example of the manner by which a minute anatomic variation may become a factor in the etiology of disease. It is well known that the staying power of athletes relates more to minute inherited peculiarities in the heart than to any other group of conditions. Let a number of men subject themselves to the same physical test—it may be a walking-match or a swimming-match—it will be found (all things remaining equal) that the man with the best heart carries the day. May we not suppose that such a heart had an exceptionally firm closure of the foramen ovale and the ductus arteriosus? That it possessed powerful chordæ tendineæ? That the pulmonary artery was free from the slightest degree of stenosis? What is true of the heart is true of the muscles of the limbs. The differences that serve to mark the musculature of the mammalia are often minute, and not of necessity of the same functional importance as those of larger size, yet doubtless have significance in adapting the animal to special conditions of environment.

In an exact sense, the structure of an animal may be said to express the resultants of certain forces. In a sense, the work of the anatomist can be said to be that of analyzing the results of these forces—as one can determine from the shape of a cedar tree, whether it possesses a tall stem and conical masses of leaves, as is seen in a cultivated piece of protected valley, or whether it is short in stem (a mere brush), and with ragged foliage irregularly dispersed over twisted boughs, as one finds it on wind-vexed sand-dunes at the seacoast. But in a sense less exact, we cannot fix all the conditions. We know only in a general way that trees grown in localities contrasted by the degrees of violence of the wind will show correspondingly great differences in shapes. In order to accurately assign the work of the various agents, we must know everything of the temperature, degrees of humidity about the trees, the nature of the soil that nurtures them, and the habits of insects and birds that frequent them, to say nothing of the innate disposition that the trees may possess to naturally select from their organization what is best for their welfare. So it is with the causes of variations in anatomy. In a general way the variations themselves are held to be the results of a few all-pervading forces (as a rule, nutrition modified in some way from what is ordinarily met with, plus the trend of heredity), and these are inscribed in the body as dynamic energies may be recorded on a kymographion. But how inadequate such a record becomes is evident when we study any of these factors by the standard of the gross changes excited by disease. Disease in a morphological sense is the expression of forces operating inordinately or eccentrically. Yet how completely our systems fail when we attempt to explain them by the tests of nutrition or of heredity! So when the anatomist is told that his science to a great degree is one of record and not of thought, the answer may be given, properly enough, we think, that the reason lies in the inadequacy of knowledge of the causes of which structures are simply the effects. If the general clinical observer will give the anatomist more data as to the causes of congenital idiocy, the anatomist will be able better to explain the appearances he notes in the dissection of the idiot. If the ethnologist will explain the meanings of the divergences and contrasts of race, the anatomist will give a more philosophical description than is now possible of the differences between the structure of a Hottentot and that of a Northern European.

Thus we may say that in the study of anatomy it is not so much the fact but the import of the fact that is essential. Anatomical facts are like letters of the alphabet, their chief uses consisting in combination for the expression of ideas. Let us suppose that, instead of twenty-seven characters, the alphabet was made up of a thousand, would the conclusion be modified that the thousand signs were still to be regarded as aids to expression? The significance of anatomical facts lies not in their number or arrangement, but in the mind that guides the scapel and the forceps. A short time ago Drs. Chitteaden and Sterling instituted an inquiry into the shapes of the teeth and jaws in feeble-minded children. After completing their work it was deemed desirable to make an examination of the same parts in an equal number of normal children. In the attempts to find such subjects in institutions where the examinations could be conveniently conducted, it was found after proper investigation that no establishment for the reformation of children or the care of orphans would meet the requirements of the case, for such children were not normal—in reformatories, because of the possible inheritance from the criminal classes, and in the

orphanages because of the loss of at least one parent before the time of the average longevity, introduced elements of inheritance of disease (syphilis, tuberculosis, scrofula, cretinism) which invalidated any claim that might be made that the children were normal. Thus in a matter apparently as simple in essentials as the shapes of the teeth and jaws, four unknown propositions in the study of the morphology of childhood arose:

1. What are the shapes of the teeth and jaws in the normal child?

2. What are they in the feeble-minded child?

3. What are they in the children of our reformatories?

4. What are they in orphans?

Sir James Paget has lately urged the examination of varieties in different examples of the same disease after the manner of accurate botanists and zoölogists, by the observation and record of the larger external characters and indications in the human body. Among the special subjects outlined he names the following: 1st, varieties of diseases usually regarded as species, and so arranged in nosologies; 2d, the effect of mingling of diseases by hereditary transmission or otherwise.

While the method is certainly a gain over accepted clinical methods, we venture to assert that the study of etiology is not satisfactory without experimentation. Jenner tells us that John Hunter was in the habit of saying to his pupils "Do not think: try." If we are not careful we may be misled as to the meaning of this saying. We all know that Hunter was always thinking and trying. His dictum is paradoxical unless it be thus read: "Do not stop at the thought; try the thought by the test of observation or experiment."

A zoölogical station is a place where experiments are conducted in the study of the structure and relations of animals. An anatomical station must be the same if anatomy is to take its place among the progressive biological sciences. Observation has been shown to be insufficient to interpret natural processes. We can observe the effects of an experiment of nature; we can imitate such an experiment; but we cannot ignore the method by which effects are produced. Bates discovered in the Valley of the Amazon the exact conditions under which a given species of butterfly existed, so that in studying its varieties he may be said to have witnessed the creation of a new species. Every thriving organism can be said to be results of Nature's successes in her experiments, every languishing one a result of her failures.

Let me in conclusion call your attention to a subject which, while resting on biological tenets, is of professional interest. It is that the anatomical material coming under our notice is almost always that of a highly domesticated,[1] or, as one may say, over-acclimated nature, and that in order to study it with advantage we must recall what is in common between man and the animals (both in a wild and a domesticated state) about him. Not that savage man is of necessity a primitive man; he is often a degraded, a degenerate man. The ranges of anatomical structure are on that account all the more interesting. The human anatomist should hold to the hypothesis that studies in degeneration are really studies of a character so closely allied to those that are morbid that the distinction in a system of knowledge cannot be made. Our acquaintance with man as a domesticated animal, as a degenerate animal, and our ignorance of him as a wild and primitive animal, cause the morphologist to regard human structures with the same sort of interest that the botanist entertains for those plants which have been cultivated so long that he has lost knowledge of the typical form of the species. Man has doubtless undergone changes in his organization precisely like those which exist in a domesticated animal when his organization is compared to that of an ancestral form. Can the anatomy of such an animal be said to be closed? Should we not rather humbly acknowledge that we know little of a subject at once so vast and so difficult?

Dr. F. P. Henry has shown in his classic papers on anemia[1] that the red blood-corpuscles in this disease approach those of the lower animals in many if not all their characteristics, namely, in their number, their size, their shape, and the amount of hemoglobin they carry. The number of red blood-corpuscles in pernicious anemia is reduced to a degree that is normal in the coldblooded animals; the corpuscles are increased in diameter, occasionally nucleated and have a decided tendency to assume an oval outline. The change in the shape and proportion of the red blood-corpuscle in pernicious anemia is an instance of degeneracy mimicking the processes of normal evolution. The type of blood-corpuscle in pernicious anemia does not become identical with that which is normal in a coldblooded animal, but it resembles the ancestral shape because it has lost the form which is characteristic of its high position in the scale.

While degeneration is a phase of a specialization it is one portraying structures that fail to subserve the highest possible use in the economy, certainly a degree of efficiency lower than that seen in similar structures in animals in a wild state. Paleontology teaches us that the earlier types of horses possessed short crowns to the molar teeth, while recent horses have long crowns. These bear to one another a relation quite the same as that discernible in the teeth of man. The best molar type in the human subject exhibits long crowns, while the worst is one in which the crowns are short and, indeed, often scarcely protrude from the gums. The terms brachidontism and hypsodontism have been proposed to

[1] The use of the word "domesticated" in this sense needs explanation. The *Century Dictionary* gives the following phrase as a definition of "to domesticate:" "to reclaim from a state of nature." It also gives the following: "to convert to domestic use, as wild animals or plants." I have used the word in the sense first given. Man is "reclaimed from a state of nature," *i. e.*, he is not available as an absolutely feral subject. But he is not domesticated as dogs and horses are, since, as Darwin (*Descent of Man*, i, 112 expresses it, man "differs widely from any strictly domesticated animal, for his breeding has not been controlled either through methodical or unconscious selection." The effects of living in crowds, on unwholesome food, for numbers of generations, may not be those of domestication: neither are they of a kind comparable to those met with in the wild animal. The essential point I wish to make is this, that many morphological details result from self-imposed restraint, and that these details are to be treated in a manner somewhat the same as when met with in the process of changing a wild animal or plant into a domestic one

[1] Philadelphia: P. Blakiston, Son & Co., 1887, p. 116

express these conditions; and we can say that while brachidontism is a sign of an early phase of variation in the horse, it is a sign of late phase in man; that in the horse it subserves a relation to the phylogeny of the zoological group to which the horse belongs, while in man it is a sign of degeneracy due to intricate causes, prominent among which lie the profound depression of vitality arising from inherited struma, tuberculosis, syphilis, or to one or more of these conditions in combination.

In like manner the phenomena of polycuspidation in the molars relate to the evolution of the group to which a given animal belongs, and the cuspidation may be lost in the attempt to adapt the form to functions of defense. Yet if in the human molar the cusps show a disposition to recede from the quadritubercular to the tritubercular type, the result is a loss to all the previous gain. Nothing good is to be expected to accrue to the individual in which they occur. In the human dental series they are very frequently seen. We can say with certainty that the loss of a cusp in a human molar tooth is associated with decreased initial energy; and that these changes are not due, as in the case in the lower animals, to adaptation to special, and, as a rule, to higher ends.

The same remarks would apply to the proportionate size of the face as compared with that of the brain-case. The long-faced ant-eater is separated by family lines only from the short-faced sloth, and these distinctions have been brought about by the law of natural selection. But the short-faced specimens of the skull of civilized men are the results not of such a law but of the recedence from positions of high specialization secured by the operation of that law. They have tumbled from a lofty position by some profound impression on nutritive forces rather than reverted. Hence they come within the range of degenerated structures.

To what extent structures which are degenerate become on that account predisposed to disease it is difficult to say. But no difficulty exists in obtaining consent to the statement that, taken as a whole, the animal economy resists the inroads of disease in proportion as its vitalities are maintained at high levels of efficiency. It is tenable, therefore, that the different parts of the economy which resist disease are also those which are richly endowed with all the essentials of well-being. This line of thought is sustained by my own clinical studies in the diseases of the nasal chamber. Many of the exceedingly numerous variations in the shapes of the nasal chambers are examples of degenerated structures, that is to say they are degraded expressions of anatomical form due to or at least associated with a facial region which is stunted and dwarfed. If such a premise be conceded, then the next thought to my mind is logical, namely, that such structures are of necessity liable to become diseased.

We may assert without fear of contradiction that the skeleton of civilized man in like maner differs from the skeleton of uncivilized man. By civilized man in this connection I mean man as we find him to be in the great centers of population, past or present, where for acknowledged periods of unknown duration he has lived in communities having attained high grades of social organization, such as the people of modern Europe (of America so far as this continent is settled from Europe) and of ancient Peru. Doubtless Asiatic centers must be added to those enumerated. Yet of these, material for study is wanting. If I may be permitted to say in a few words what impresses me most in a series of skulls of civilized centers, it is the absence of correlation, that is to say, I find the disposition usually present in crania of wilder types of man for one part of the skull to be in harmony with another part to be largely absent. The bones themselves appear to be individualized. Let me mention some of these. The occipital bone tends to project between the lambda and the inion. The malar bone tends to elongate vertically, so that the orbit is relatively large; the ethmoid bone to extend less into the nasal chamber, so that when the middle turbinated bones are sought for in the living subject they are found to be lodged high above the plane of nostrils, and their lower borders are often oblique in position instead of horizontal. The roots of the upper molar teeth tend to be confluent, and the crowns to be elliptical in shape instead of quadrangular. Yet not infrequently a small, square orbit may be associated with an elongated jaw, or a short, set jaw with a wide, ovoid orbit.

Perhaps the best single conclusion to be drawn from the study of morphology as a factor in the study of disease is its value to humanity. The scientific study of race in connection with diseased action is almost an unbroken field. When this comparative phase of anatomy shall have been formulated we shall for the first time have a reasonable hope that the subject of human acclimatization, the geographical study of diseases, the causes and motives of migration, and thus indirectly, the history and destiny of man himself may be in shape for elucidation.

[Since the foregoing address was written my attention has been called to a paper read by M. de Giovanni on "The Morphological Examination of the Individual," an address delivered before the late International Congress at Rome. I have also received from Prof. Wilhelm Roux, of Innsbruck, a prospectus of a new publication, entitled *Archiv für Entwickelungsmechanik der Organismen*. This journal will serve as a vehicle for the expression of views much the same as those held in the foregoing address. It would seem, therefore, that the subject of morphology, especially in relation to clinical and pathological conditions, is already attracting attention.]

METHODS OF TEACHING SURGERY.[1]

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THIS paper has been prepared at the request of the Committee on Program, to serve as an introduction to a discussion upon the best methods of teaching surgery, and is intended to ask questions rather than to answer them. We have to consider: 1. Who are to be taught? 2. What is to be taught? 3. How it is to be taught.

Those who are to be taught include two classes: 1. The average medical student, who is presumably to become a general practitioner. 2. The men who wish to specially fit themselves for surgical work. There is a third class, namely, those who wish to learn only the least possible amount of surgery which will enable them

[1] Paper read before the American Surgical Association at Washington, Wednesday, May 30, 1894.

to get the degree of M.D., but these we need not consider to-day.

The surgical instruction to be given the average student depends on what he is required to know of anatomy and pathology before he begins his surgical studies, upon the amount of time which is allowed for surgical instruction, and upon the nature of the final examination which he must pass to obtain his degree, or license to practise.

In any case it should include the diagnosis, and best method of treatment, of the injuries and surgical diseases which the general practitioner is most often called upon to treat, including recent wounds and their complications, erysipelas, abscess, ulcers, etc.; fractures and dislocations, injuries of bloodvessels, strangulated hernia, urethral stricture, retention of urine and its consequences; obstruction of, or foreign bodies in, the air-passages; and also the selection and administration of anesthetics, the details of aseptic and antiseptic methods, and of methods of performing the most usual amputations, and ligations of bloodvessels.

Let us suppose that the instruction is to be given in a three-years' graded course; what other subjects besides those mentioned ought to be fully treated of by the surgical teacher? Under such circumstances is it worth while to go into the details of cerebral and abdominal surgery, of lithotomy and lithotrity, of excisions of organs or of the jaws and joints, of plastic and orthopedic surgery? Is it not enough to tell the average student what can be done in these directions, and refer him to special courses or to current literature for further information with regard to complicated and difficult operations requiring special instruments and apparatus? Of course, it is to be practically demonstrated that the teacher is the proper person to whom cases of this kind should be sent.

Deferring for a moment the consideration of the needs of the man who wishes to become a surgeon, we come to the question, "How are these subjects to be taught?" There are five principal methods: 1. Didactic systematic lectures. 2. Recitations. 3. Demonstrations and practical instruction by means of manikins, dummies, cadavers, and operations on animals, in the details of treatment of wounds, bandaging, dressings, and operations. 4. Theoretical clinical lectures, in which cases and operations are shown in an amphitheater. 5. Practical clinical instruction to small groups of students or ward-classes, in which, as far as possible, each student has something to do in the diagnosis or treatment or both.

The modern tendency is to reduce the time given to systematic lectures. In discussing the wisdom of this, we must bear in mind the different organization of the teaching staff in different schools, the increasing number of chairs or lectureships devoted to specialties, and the fact that the precise division of subjects among the instructors in a given school must depend to a considerable extent on local conditions, on the character, tastes, and teaching-powers of the different men who make up the faculty, on the amount and character of the facilities for laboratory and clinical teaching present, etc.

In the old-fashioned type of medical school, in which the whole instruction was given by seven or eight men, the professor of surgery taught what was called surgical pathology, or the principles of surgery, gave considerable attention to surgical anatomy, and was the clinical as well as the systematic teacher. There was at least one advantage, namely, that the teaching was consistent and harmonious; the student was not much bewildered with the conflicting views of different professors. The professor of anatomy was in training for the chair of surgery, and took very little interest in comparative anatomy or in embryology. There was no professor of pathology; and both the professor of surgery and of medicine lectured on inflammation, congestion, suppuration, etc., each from his own point of view.

At present, in a large and popular medical school, there are from twenty to thirty teachers of various grades; there is a professor of pathology, of surgery, of clinical surgery, of surgical anatomy, of orthopedic surgery, of genito-urinary surgery, etc., and the professor of gynecology takes a large share of the abdominal surgery.

Now how can the subject of surgery be subdivided among all these teachers in such a way that the whole field shall be covered, without involving useless repetitions, embarrassing contradictions, and the expenditure of an undue amount of time and labor by the student, or of the production of heart-burnings in some of the teachers? This is one of the most difficult problems in the organization of a large medical school which is to be really efficient and popular, and it is one to which no general and universal formula is applicable.

Theoretically, each professor being a thoroughly wise, unselfish, good-tempered man, desiring only the best interests of his pupils and of his school, and there being frequent consultations between them to secure harmony in their teachings, the desired result may be obtained. Practically there are usually two or three strong men in the faculty who settle what shall be done, and the rest find it expedient to submit, although they may not agree. When there are no sufficiently strong men, and all the professors are not perfectly good and unselfish, there may be trouble.

Let us consider details a little. A well-organized medical school should have a professor of pathology and pathological anatomy, under whose direction a certain amount of laboratory instruction should be given—comparatively simple for the average student, extended and elaborate for post-graduates. The greater part of his teaching for the average undergraduate student must be by lectures, with demonstrations.

Given such a teacher, with the necessary facilities, why should the professor of surgery lecture on surgical pathology or bacteriology to the average undergraduate? The only really good reason I think of is, that he should be thoroughly familiar with the subject, and at times use experimental methods in devising improvements in surgical practice, and that teaching the subject greatly helps him to obtain, classify, and retain his knowledge. But his teaching on this subject would be most valuable to a special class of advanced students, or post-graduates—who can devote themselves to it, and give the necessary time to that experimental work on animals which is absolutely essential to secure satisfactory results.

At all events, I think we can agree that the rela-

tions between the surgeon and the pathologist should be intimate and friendly, while each should be entirely independent of the other, and that the surgeon should go into details of practical application of principles in accordance with the more general teaching of the pathologist.

As regards the teaching of surgical anatomy, and of operations on the cadaver, by a teacher distinct from, and entirely independent of, the professor of anatomy on the one hand and the professor of surgery on the other, I believe that there are widely different opinions as to its expediency. Such an independent chair, or demonstratorship, is usually provided to make a place for some particular man, and its utility must depend upon who this man is.

While no general rule on this point can be laid down, might it not be best that attendance on such an independent course should be purely voluntary on the part of the class, and that it should be largely devoted to the instruction of those who wish to make a specialty of surgery? It appears to me that more use should be made of living animals than is now done in teaching the results and treatment of wounds, including details of aseptics and antiseptics, and in special courses for advanced students who should be required to perform operations under the guidance of the surgeon.

The next question is as to the part which clinical surgery should play in a course of education leading to a medical degree. The great majority of students prefer clinical teaching and demonstrations to didactic lectures, and will go where this clinical teaching is most brilliant and varied; and, so far as it goes, we must admit that this kind of teaching is generally the most useful to them, because they remember it better. How far is it possible to cover the field of diagnosis and treatment of injuries and surgical diseases by clinical teaching alone to the extent that it is desirable for the average medical student? And how far is it desirable to vary and modify the didactic teaching so as to make it supplementary to the clinical teaching?

Evidently the answers to these questions must depend in part upon the amount and variety of clinical material that is available, and hence must differ in different schools. As a rule, clinical material is not available to cover the entire field for any school, no matter how large its hospital and dispensaries—hence there must be some systematic didactic teaching. Is it best that this should be a complete independent course covering the whole field, merely using for any particular subject such cases as may happen on that day to be available, thus leaving the greater part of the clinical teaching to duplicate that which has been given in the systematic course? This is, upon the whole, the easiest way, and in favor of it is urged that it is desirable that the student should be told the same thing several times to insure his remembering it. This is the argument which used to be used in favor of the old plan of not having a graded course, but compelling the students to listen to the same course of lectures in successive years.

On the other hand, it can be seen that there would be certain advantages in deferring the systematic lectures until toward the end of the course, and then devoting them mainly to subjects which had not been illustrated in previous clinical teaching; but to make this plan a success it would be necessary that the systematic lecturer should either have given all the clinical instruction, or should be perfectly familiar with all that has been given.

A possible modification of this plan would be to let two professors divide the field of work, each taking a certain class of diseases and injuries, giving clinical instruction thereon and supplementing it with systematic teaching as suggested, and then the two men exchanging fields of work each year. An objection to this is that a considerable part of clinical teaching is given in connection with patients who select their own surgeon, and who will not make such selection with reference to any curriculum. Undoubtedly the more clinical instruction of the right kind that can be given, the better for the students and for the reputation and prosperity of the school.

But this phrase "clinical instruction of the right kind" brings up a new set of questions. How much does it profit the student to witness, from the rear benches of an amphitheater, such operations as the ligation of arteries, the extirpation of tumors, lithotomy, or nephrectomy? Undoubtedly the student is interested and learns something, and he will go where he can see—if not the operation itself, at least the heads of the persons who are busy about the patient; and it will not do to restrict his privileges much in this respect. At the same time, should not special opportunities be given to the few who are devoting themselves specially to surgery to see as much as possible of difficult and unusual operations? It appears to me that more than two hundred men cannot possibly obtain any special information from surgical clinics in an amphitheater which they could not obtain equally well in a didactic lecture, and which could not be much better given with illustrations by means of lantern slides, than by using a patient as a means of demonstrating an operation. It is quite possible to show by means of lantern slides, as Dr. Kelly has proved, to several hundred men, every detail of an operation which can be seen by the immediate assistants of the operator.

Now with regard to clinical teaching to comparatively small sections, or ward-classes, the members of which are to be brought as much as possible into contact with the patient, and even to assist in the operation of dressing. There is no doubt as to the utility and popularity of this mode of teaching, but in this connection a word may be said with regard to the relations of hospitals and dispensaries to surgical teaching.

While I believe that a hospital is not doing its fullest and best work if it is not increasing and diffusing knowledge, and that patients secure the best and most careful attention and treatment in teaching-hospitals, where the work of the staff is keenly scrutinized, yet it must be admitted that there is sometimes a danger that people will get the idea that in a teaching-hospital the interests of the patients are not as fully consulted as they should be, and will avoid that hospital as much as possible. This danger arises mainly from two things: first, the allowing students to have anything to do with the treatment, and especially with an operation. The patient wants to be operated on by the most skilled man, that is by the professor; and if he has a suspicion that after he is under the influence of an anesthetic the professor may hand the knife to a student to make perhaps his

first essay, he will avoid that place. All of us would do the same, and therefore in ward-class teaching a patient should never be deceived as to who is to perform the operation, for sooner or later the deception will be discovered and the news will spread.

The second danger to the popularity of a teaching-hospital is that patients are not infrequently made to wait until their cases can be used for clinical instruction, sometimes for hours, sometimes for days. In most cases the patient knows when he is put off for this purpose, and after one experience of the kind he will go to another hospital the next time, and advise his friends to do the same.

It is well also that the clinical surgical teacher should remember that his ability to obtain abundant clinical material depends to a very considerable extent upon the manners and on the good-will of some of his assistants, the resident physician, the nurses, etc., who are often the first to see the patient as an applicant, and who have much to do with subsequent treatment.

These assistants, residents, receiving-officers, case-takers, and nurses are not always possessed of the exquisite tact, kindly sympathy, and knowledge of human nature which it is to be presumed are invariably the characteristics of the clinical surgeon; and it is a part of his business to instruct them and perfect their manners as much as possible.

Recitations and quizzes are excellent methods of teaching for the majority of students, but are only well adapted to small classes or sections. At present they are, for the most part, conducted as a private enterprise by persons who may, or may not, be on the teaching staff. The question as to whether this mode of teaching should be made use of in the official course to a considerably greater extent than is now done is an interesting one, and is commended for discussion. It appears to me more desirable that it should be applied to the clinical teaching than to the didactic lectures, and one good result of this would be to discourage the reliance on quiz-compends, which I think invariably do more harm than good.

With regard to modes of lecturing, every man is, of course, a law unto himself; yet I will venture one or two suggestions. The teaching for a class of students should be definite, selective, and, to a considerable extent, dogmatic; and critical historical discussions should be used very sparingly.

What the student hears and sees during the first half-hour of a lecture is what he will remember best, and will have the best notes of; therefore, when there are several different ways of doing a thing, let the teacher describe first the method which he prefers, taking all the time required to fully demonstrate it and impress it on the student. After this is done the other methods may be referred to, and so much history and criticism given as time will permit. If the reasoning is given before the conclusions are stated, the student is apt to get confused, and to characterize the teacher as a "wobbler."

If the lecturer will fix in his mind the half-dozen questions or so that he would ask to test the students' knowledge of the subject upon which he is going to speak, and will then make it his main object to answer those questions clearly, definitely, and fully, he can hardly fail to give a good lecture.

In objecting to too much history in didactic or clinical lectures on surgery, I do not wish to be understood as underestimating the importance of giving historical instruction. I think that in every medical school a course of lectures on the history of medicine and surgery, combined with practical instruction in bibliographical methods, should be given; and if this is not done, then I would advise that the professor of surgery devote five or six lectures to the history and literature of his subject, which lectures will probably be most useful and interesting at the beginning of the last year of the student's course.

It was stated at the beginning of this paper that besides the average medical students, the needs of the man who wishes to specially fit himself to be a surgeon should be considered. These relate to post-graduate work mainly, for a broad foundation of medical knowledge is requisite for the man who wishes to become a surgeon. The technique of operative surgery, important as it is, is secondary in importance to skill in diagnosis and to knowledge of therapeutic methods which do not involve the use of the knife.

The man who intends to be a surgeon should not only make a special study of surgical anatomy, but should do a considerable amount of practical laboratory-work in bacteriology, pathological histology, and experimental pathology and physiology.

It is quite true that the majority of our leading surgeons could not, perhaps, by themselves make a bacteriological diagnosis, or determine fine distinctions in new-growths, and yet they do good work—having these points settled for them by younger men trained in the new methods. But the surgeon of the future should himself be trained in these methods, even though he may employ others to carry them out.

And in this connection I would remind you that bacteriology cannot be profitably studied for two or three days in a week, but that it needs at least three hours a day every day for three months for a man to learn how to begin readily to use its methods. In general, I think that all studies are best concentrated, and that the usual plan of dividing studies into an hour two days a week for this, and an hour three days a week for that, etc., is much more for the convenience of the professors than it is for the true interest of the students.

As for operative technique, much of it can be learned on animals, but much of it requires also work on the cadaver, the repetition over and over again, until, as Billroth said, a man could do it when he was asleep. The most important of all is residence in a hospital, the working as assistant to a surgeon, the seeing and handling of cases, and not merely looking at them from a distance. The number of men who are able and willing to carry out such a course of study as that indicated is limited, and the teacher of surgery cannot do very much for them except give them opportunities for seeing his methods and results; but is it not possible to give them better opportunities than can be provided for a large class of undergraduates? Should they not be required to repeatedly perform the many operations which can be advantageously performed on animals before they try these operations on man? It seems to me that in the last year of a four-years' course all students should be tested in this way; but it must be admitted that, with

the present curriculum, there is not time to spare for this purpose, especially when the graduating class is a large one.

This leads to two final questions, which, though not directly connected with "the best methods of teaching surgery," have, nevertheless, an important bearing on them. The first is: Are there not some subjects which occupy too much space in the undergraduate curriculum of our largest and best medical schools, such, for example, as inorganic chemistry and embryology? Ought not the student to be required to know so much as is required of inorganic chemistry before he begins his medical course? Is it desirable to make embryology and general morphology a part of the curriculum for all medical students, as a basis for the study of anatomy, or is it wiser to place these as elective studies in a post-graduate course, and to insist on more dissecting and a greater knowledge of practical anatomy than are now generally demanded? In this connection your attention is invited to the widely different opinions as to the best methods of anatomical teaching—as represented by Professor Macalister for the morphologists, and Mr. T. Cooke, for the old school, which have appeared in the *Lancet* and in the *British Medical Journal* during the past year.

It appears to me that the teaching of anatomy should begin with a few lectures and demonstrations on general morphology, and that the first dissections should be made on cats and dogs until a good technique has been acquired, so that the supply of human cadavers, which is always insufficient, can be fully utilized to the best advantage. I also think that it is unwise to have the final examination in anatomy one or two years before the other final examinations; the anatomy should be kept up throughout.

My last question is: Would it not be good policy for a first-class popular medical school to limit the number of pupils which it will accept to its capacity to give them proper instruction in laboratory-work, in practical anatomy, and in clinical medicine and surgery? Of course, each faculty is prepared to assert that its own school now does this, and will disapprove of fixing any limit to the number of its pupils; nevertheless, it appears to me, as an outsider, that there are at least two or three medical schools in this country which would act wisely if they would fix a limit to the number of students which they would receive either in the first or in the third year, or in both, and enforce this limit by competitive examination or by higher fees, or by both. It would bring the best men to them, and would enable them to do thoroughly good work.

An Epileptic Colony for Illinois.—At the meeting of the Illinois State Medical Society, held at Decatur, May 15–17, a resolution was introduced by Dr. J. B. Maxwell, and unanimously passed by that body, indorsing a proposition for an epileptic colony on the Bielefeld plan. The matter was referred to the Legislative Committee, and that committee (consisting of D. W. Graham, of Chicago; J. B. Maxwell, of Mt. Carmel; and B. M. Griffith, of Springfield) was instructed to bring the matter before the next Legislature, and use all honorable means to have such a colony established.

ORIGINAL ARTICLES.

FATAL NAUSEA AND VOMITING OF PREGNANCY, WITH REPORT OF CASES.[1]

BY EDWARD P. DAVIS, A.M., M.D.,
OF PHILADELPHIA.

IN 1888, Graily Hewitt, of London, an Honorary Fellow of this Society, contributed a paper on "Severe Vomiting During Pregnancy," in which he drew attention to anteflexion and impaction of the pregnant uterus as conditions encountered in these cases and undoubtedly concerned in their causation. It is my purpose to report three cases of fatal nausea and vomiting of pregnancy, in two of which conditions described by Dr. Hewitt were present, and in one of which a pathologic condition of suggestive interest and rarity was observed. I desire also to call attention to certain clinical signs of value in the prognosis in these cases as indicating a dangerous condition of the patient. The clinical histories are briefly as follows:

CASE I.—Mrs. A., a widow, had been treated for several months by a physician who supposed her to be suffering from chronic gastritis. An expert physician who saw her in consultation had confirmed the diagnosis and approved the treatment. Her symptoms attracted the attention of a medical student boarding in the house, who suggested to the family that disease of the pelvic organs might be present, and that a vaginal examination be made. I was asked to see the patient in consultation by the physician in charge. She was emaciated, with a rapid, feeble pulse, sordes beginning upon the teeth, her eyes sunken and glassy, her breath offensive, and emaciation well marked. She was vomiting food taken, together with mucus stained with coffee-ground material.

She complained of pain in the chest beneath the sternum. Her intellect was clouded, although usually her mind was clear. Vaginal examination revealed a uterus enlarged several times the usual size; it was retroverted, the os and cervix exceedingly soft. The finger readily entered the cervical canal, but found the internal os closed. As the patient was without systematic care, she was urged to go at once to a hospital where trained nurses could attend her. Twenty-four hours after this she was removed to the Philadelphia Polyclinic; a tampon of carded wool was placed beneath the uterus, and the patient was carefully fed by rectal injections, and stimulated hypodermatically. The uterus was readily raised, and its altered position gave the patient no increased distress. Her vomiting ceased, she retained food given by the rectum, and also very small quantities of food taken by the mouth. The tampon was removed, the fundus of the uterus brought higher in the pelvis, and sustained by a packing of gauze. The patient's general con-

[1] Read before the American Gynecological Society, at its annual meeting, Washington, May 29 1894.

dition, however, grew worse, purpuric spots appeared upon the body, sordes increased, low delirium supervened, and she died apparently from exhaustion.

Permission for a post-mortem examination could not be obtained. As the pregnancy, if present, was illegitimate, nothing was said to her family regarding its existence. The size and shape of the uterus and its consistence were those of pregnancy advanced several months, and a close examination of the history of the case supported this view. The points of clinical interest in the case were the coffee-ground vomit, and profound disorganization of the blood as evidenced by extensive purpuric areas.

Case II.—This case was that of a woman, aged thirty years, who was first seen two years ago, and who complained of suffering caused by dysmenorrhea, accompanied by anteflexion and prolapse of the uterus. She experienced relief at that time by the use of carded wool tampons. She passed out of observation, and came to my notice again in October, 1893, stating that she had received treatment from another physician; that she had, she thought, suffered from abortion; that she was then pregnant about two weeks. I afterward learned from the physician who treated her that granular degeneration of the cervix had been present, with a greatly softened and patulous os uteri, with extreme anteflexion.

In addition to the usual discomfort of early pregnancy, the patient suffered from intense nausea and vomiting. She had always been of nervous temperament and lacking in self-control. She complained that, in addition to vomiting, she suffered severely from straining and retching. She was informed that her condition required very careful attention, and various remedies were given her; her diet was regulated, and peptonized milk, broths, and other suitable food were systematically given. She grew, however, steadily worse. As she was in a boarding-house, she was urged to hire a trained nurse, and to remain in bed or to change her quarters to a hospital where skilled nursing could be obtained. Her progressive increase in substernal pain and her persistent straining and retching seemed grounds for grave anxiety. She refused a vaginal examination, and did not appreciate the danger of her condition. She declined to accept my advice, and sought treatment from Dr. Elizabeth Greenbank, to whom I am indebted for notes of the case until I saw the patient in consultation before her death. Dr. Greenbank records that the patient's temperature was subnormal, her pulse remaining below 100, her condition exceedingly variable, substernal pain, occurring in the early evening, being especially severe. The patient finally allowed Dr. Greenbank to make a vaginal examination, when marked anteflexion with prolapse of the uterus were found. This examination greatly increased the patient's distress. She finally secured a house of her own, and accepted a trained nurse. Her pulse gradually increased in frequency, and at the end of the thirteenth week of pregnancy rose above 100.

At the end of the fourteenth week of pregnancy, I saw the patient in consultation with Dr. Anna Broomall; her pulse was 120, her temperature normal, her tongue slightly coated; she was but little emaciated. The uterus was anteflexed, the fundus low, the lower segment impacted in the pelvis. Under partial anesthesia, the uterus was raised and the vagina tamponed. Coffee ground vomit was present, although in slight amount; substernal distress, however, continued and was excessive. On the day following the replacing of the uterus, the patient's symptoms were aggravated. On the second day following the first consultation, the tampon was changed, and the uterus was found considerably higher in the pelvis. On the third day, another consultation with Dr. Broomall was held, and I urged that the cervix be dilated, and gave an unfavorable prognosis. Dr. Broomall urged that the stomach be washed out at the same time. Under chloroform, the internal os was found to be rigid, thickened, and tightly closed. The finger could not enter the uterus, and the bladed dilator was used until the finger could be inserted. This dilatation was increased by the use of the solid metal bougies until the index finger entered easily. The stomach was thoroughly douched with dilute saline solution. Following this dilatation, the patient's vomiting ceased, her substernal distress ceased entirely, and she spent the best night for two weeks. Her pulse was 130, her temperature 99°. In the afternoon, her temperature rose to 101°. At 6 P.M., a chill occurred, with temperature 102.6°. This was followed by syncope from which the patient slowly rallied. Pain and hemorrhage supervened, and I saw the patient at 11 P.M. She was excessively weak, but conscious, and complaining of labor-pains only. Her vomiting and substernal distress had entirely ceased. At her urgent request and that of her husband, it was decided to terminate the abortion at once. She recognized the hopelessness of her condition, but begged to be relieved of the pain of abortion and excessive weakness. She was accordingly stimulated by hypodermatic injections, and under chloroform the fetus was quickly removed, and the uterus thoroughly curetted with the blunt douche curet. It was then packed with iodoform-gauze, and carried well up into the pelvis. There was no hemorrhage during the emptying of the uterus; the patient rallied from the anesthetic, became conscious, but died in syncope shortly afterward.

The post-mortem examination was made by Dr. W. M. L. Coplin, in the presence of Dr. Broomall and myself, sixteen hours after death. The color of the body was yellow; the conjunctivæ were clear; the mucous membrane reddish. Slight subcutaneous edema was universally present. Rigor mortis was well marked, except on the abdominal walls, which were flaccid. The body was not entirely cold, although surrounded by ice. An incision was made from the tip of the sternum to the pubes. The subcutaneous fat was abundant, firm, and bright-yellow. The extra-peritoneal fat was also abundant. The omentum was fat, containing fatty masses along the colon. The fundus uteri was one inch below the umbilicus. The peritoneum and intestines were normal; no evidence of septic paresis was present. Both tubes and ovaries showed no gross evidence of disease.

The uterus was slightly edematous to pressure. The spleen was vascular, not enlarged or especially softened. Both kidneys were flabby in consistence, and the cortex stained bright-yellow. The liver was normal in shape, the gall-bladder normal, the liver-substance of normal consistence and bile-stained.

The uterus, tubes, and ovaries were removed. Longitudinal section of the entire uterus was made through the anterior wall. The uterus was distended with gauze, and was dark purplish-red in color, its sinuses filled with soft currant-jelly masses, not clotted. On the posterior wall, on a line extending between the orifices of the Fallopian tubes, a transverse line resembling scar-tissue could be seen. The internal os had been dilated, but was excessively resistant, resembling gristle. The placenta had been attached over the fundus and the orifice of the left tube; a small portion of the placenta remained adherent. No other portions of the ovum or appendages remained in the uterus. The uterus had evidently been curetted and practically emptied. No evidence of injury to the organ from dilatation or curetting could be detected. On the anterior and posterior walls of the cervix were areas of fibrous tissue, excessively firm, resembling that extending transversely across the posterior surface. In dilating the uterus these tissues had expanded more laterally than anteroposteriorly, although careful examination failed to reveal evidence of injury to them.

The stomach was long, narrow, filled one-half with fluid; areas of thrombosis were visible along its greater curvature. The stomach was ligated and removed unopened. The diaphragm was punctured, and an effort was made to remove the heart by inserting the hand into the chest. The heart was excessively friable. The valvular apertures admitted two fingers; no evidence of atheroma was present. The heart-substance was dark-red, very flabby, and tore easily. The pleuræ were smooth, non-adherent, and tough. The lungs were collapsed and contained air in portions; the substance was normal. One lung was removed and examined. The pancreas was apparently normal.

Especially noteworthy was the condition of the blood, which was fluid, dark currant-jelly in color, and without clots. No ante-mortem clot was found in the sinuses of the uterus. Also remarkable was the flabby condition of the heart, kidneys, spleen, and uterus, and the stained appearance of the parenchyma of all the viscera; this staining was with a dark currant-jelly fluid.

The patient died a cardiac death.

A close examination of the uterus revealed an exceedingly interesting condition of the cervix; this part of the womb was composed of dense connective tissue arranged in whorls; amid this tissue were found two cysts, one an inch and a quarter in diameter, the other half its size. These cysts contained thick, transparent, yellow, gelatinous substance, which on microscopic examination was found rich in small, ovoid cells without nuclei, the protoplasm in a granular condition. These were undoubtedly retention-cysts from retained secretion of mucous follicles. No bacteria were found in the cervix, although it is quite possible that parasitic growths were present. Microscopic examination of the liver showed the parenchyma in a state of granular degeneration. A very interesting phenomenon shown in microscopic sections of the kidneys is the presence of hyaline casts *in situ*, which are freely distributed throughout these organs. The illustrations appended, showing the cervix and cyst, and the

Fig. 1.

Vertical section of uterus, showing cyst in posterior wall of cervix.

walls of the cysts, are the work of Dr. David Bevan, Instructor in Microscopy in the Jefferson Medical College. The various tissues in the case were examined in the pathological laboratory of Drs. Coplin and Bevan.

Referring to the notes of the patient's condition during the last two weeks of her life, we find that albumin and hyaline casts were found in considerable quantities.

In reviewing the history and pathology of this case, I desire to call attention, first, to the conditions present in the pelvis: marked anteflexion of uterus, the neck of which was composed of dense connective tissue; the presence of retention-cysts in its cervix, the impaction of the uterus against the symphysis, and the excessive tenderness of the pelvic tissues were certainly irritant cause enough for reflex vomiting. The hematin-staining of the

patient's tissues, the fatty degeneration of the various portions of the body so extensively present, and the great softening of the heart-muscle, point to fatal anemia. This fatty degeneration was largely

Fig. 2.

Dense connective tissue in cyst-wall.

responsible for the fact that the patient seemed but little emaciated, and this appearance of nutrition was urged by one of the physicians in the case in support of a favorable prognosis.

Case III.—Mrs. X. was a primigravida, the wife of a clergyman. She was seen in consultation by me at the request of Dr. Loux, of Philadelphia, who had been called in attendance a few days previously. During the first weeks of her pregnancy she had been subjected to homeopathic medication, which consisted largely of the administration of water in teaspoonful doses, and also comforting assurances regarding the future. On examination the patient was not excessively emaciated. Her pulse varied from 100 to 120; her temperature was not above 99°; she complained of very little abdominal distress, but at night suffered from substernal pain, nausea, and vomiting. Vaginal examination revealed the uterus anteflexed and low in the pelvis, but not impacted. The physician in attendance had faithfully endeavored to feed the patient in various ways, had given sedatives, and also stimulants hypodermatically, but without avail. It was his opinion that prompt emptying of the uterus was indicated. The vomitus had been streaked with coffee-ground material for two days. After examining the patient, I agreed with Dr. Loux, that inasmuch as the uterus was not impacted, but sharply anteflexed, we would gain little by simply elevating it in the pelvis. I urged that the cervix be dilated, and that if this was not followed by immediate improvement, that the uterus be curetted and packed with gauze as soon as possible. This advice was conveyed to the husband, who was distinctly informed that his wife was in a very critical condition. He asked for delay until the following day to communicate with her relatives. Immediately after the consultation, members of his congregation persuaded him that the gloomy prognosis was entirely unjustified, and strongly urged employment of a different physician. The second physician called in consultation at once supported the view of the parishioners, and assured the husband that rest and feeding and waiting were all that were necessary, quoting the familiar obstetric teaching, that "cases of nausea and vomiting of pregnancy often improved suddenly and radically, and that the practice of abortion is rarely indicated." I did not see the patient again, but am informed by Dr. Loux that the patient went steadily from bad to worse, dying from exhaustion a short time after I saw her. In her case I based an unfavorable prognosis upon the substernal pain, coffee-ground vomit, the length of time during which she had been in an anemic condition, and her general aspect, which closely resembled, though in less degree, that of the cases already described.

In summarizing these cases, their significance to my mind lies in the fatal condition of anemia which was present. The literature of pernicious anemia in pregnant and puerperal patients affords abundant illustrations of serious impairment of the blood, sometimes accompanied by ulcer of the stomach (Leube and Fleisch, *Virchow's Archiv*, lxxxiii 1124). Atrophy of the gastric mucous membrane, often associated with hypertrophied polypoid villi, is not infrequently seen in pernicious anemia, in cases in which pain and coffee-ground vomit are familiar symptoms. The condition of the heart may be partially responsible for the substernal pain in these cases, while changes in the marrow of the bones of the thorax are thought by some to produce it (myelogenic leukemia). It is also a recognized fact that, in anemia, pain may be reflected to the central ganglia of the trunk, so that the substernal distress of which these patients complain may be properly considered as a reflex from a uterus in a pathologic condition.

In conclusion, I desire to advance the following propositions, of which the cases reported are illustrations: Nausea and vomiting of pregnancy are dangerous in proportion as they induce pernicious anemia. Such a condition of danger is to be recognized by studying these cases in the light thrown

upon them by the pathology of anemia. While it is possible that sudden and radical improvement may occur in cases in which a functional neurosis is the predominant factor, only when pernicious anemia is once established is delay dangerous, no matter at what period of pregnancy the patient is seen. While it is true that raising and sustaining an impacted uterus will relieve many milder examples of this affection, cases in which danger threatens should be met by prompt dilatation and emptying of the pregnant uterus, which are to be effected by modern surgical methods.

A SUMMARY OF THE HISTORY AND PRESENT POSITION OF THE OPERATION OF CASTRATION FOR HYPERTROPHY OF THE PROSTATE.[1]

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IN the fall of 1892 I was asked to prepare an address on the surgery of the hypertrophied prostate for the coming meeting of the American Surgical Association in 1893.

In December, 1892, I requested one of my assistants, Dr. Kirby, to make a series of experiments on dogs with a view to determining whether or not castration would be followed by notable atrophy of the prostate. The thought that this was possible had been suggested to me by the comparison long ago made by Velpeau and afterward by Sir Henry Thompson between prostatic and uterine fibro-myomata.

Control-observations as to the weight of the normal prostate in dogs were begun at once. The first castration was done January 27, 1893; the others followed at intervals of a few days. The results, showing rapid atrophy, first, of the glandular and, then, of the muscular elements, were so decisive that I embodied in the paper I was writing the suggestion that castration might be a valuable therapeutic measure in many cases of hypertrophied prostate. So far as I know, the suggestion had never before been laid before the profession.

I subsequently learned of the observations of John Hunter and Owen and the confirmatory investigations of Mr. Griffiths as to the changes in and out of the rutting season in the prostate of the mole, the hedgehog, and other animals, and as to the effect of castration in various species in producing prostatic atrophy. Griffiths' observations appear to have been confined to animals already castrated for other reasons; no definite series of experiments is mentioned. He maintained, moreover, that the enlargements of the gland were not to be classed with the uterine fibro-myomata. His paper, which was written to demonstrate that the prostate is in its essential significance a sexual and not a urinary organ (a subject which has long been under discussion), contained a few illustrations, taken from various sources, of atrophy of the prostate in eunuchs. I found in addition a note by Harrison that in cases of sterility in the male the prostate had been shown to be atrophied.

No reference existed in surgical literature to any possible application of these facts to the treatment of cases of hypertrophied prostate, but they strengthened me in my decision to bring the matter up for consideration.

Theoretically, the line of argument was as follows: The prostate, while not embryologically the true homologue of the uterus, is developed from structures quite distinct from those that form the urinary passages. The structure of the prostate and that of the uterus are strikingly similar. The growth of the organ is in direct relation with the sexual life of the individual; its overgrowth occurs at a period when the sexual life is fading out, but is usually not extinct. The reproductive life ends sooner in the female than in the male, and accordingly we find fibro-myomata appearing earlier in the former than in the latter. The histology of the growths and of their varieties is remarkably alike in the two sexes. The uterine tumors do not appear after the menopause, or, if present, undergo atrophy at this time. After a certain period of life there is no increase in the tendency to enlargement of the prostate, but rather the reverse.

In the female oöphorectomy causes a disappearance of these growths and an atrophy of the uterus itself. Castration almost certainly has the same effect upon the normal prostate in our species, and I have experimentally demonstrated that it has such an effect in dogs.

The fact that we have no example of spontaneous shrinking of the hypertrophied prostate in old age may be explained by the great frequency with which the trouble causes death in such cases.

Messer's tables, founded on a dissection of 100 prostates in men over sixty years of age, disclose one interesting fact in this connection. Assuming arbitrarily that eighty may be taken as the age at which, in the great majority of men, the sexual life is absolutely and finally ended, we find that among those subjects whose prostates weighed over six drams the percentage of octogenarians or their elders was only 22.8, while among those whose prostates weighed less than six drams (many of them less than normal) the percentage was 35.3, more than half again as great. This is not only confirmatory of Desnos' observation that after a certain period of life the frequency of notable

[1] Read before the American Association of Genito-Urinary Surgeons, at its meeting, at Washington, May 29, 1894.

hypertrophy diminishes, but it suggests the possibility that in many of these cases physiologic atrophy had already begun. The subjects were not selected from among patients, but just as they happened to come within reach of the investigator.

The uncertainty as to the exact duration of sexual life in the male also weakens the force of the statement that the condition does not manifest itself until after the period of life when it should occur if it were truly homologous with the uterine growth. In addition, it may be said that there is accumulating evidence that prostatic hypertrophy begins during middle life much more frequently than was formerly supposed, and that the statistics on which we have been accustomed to rely, based on museum specimens and on the experience of surgeons to whom the patients apply only when distinct subjective symptoms have developed, are to an extent unreliable.

My view that these facts justified a trial of castration for the cure of prostatic hypertrophy was greatly strengthened by the fact that Kirby's experiments on dogs, made at my request, not only demonstrated the atrophy that took place in that species after castration, but also showed its extreme rapidity.

At the time I read the paper in Buffalo, New York, on June 1, 1893, before the American Surgical Association, my opinions rested on this foundation.

Abstracts were published during June in most of the medical journals of this country. On August 1st the paper was published in its entirety in the *Annals of Surgery*, and on September 9th a full abstract appeared in *The British Medical Journal*, that part relating to castration being unabridged.

Since June, 1893, the following communications relating to the subject have appeared:

Centralblatt für Chirurgie, No. 35, September 2, 1893. Ramm, of Christiania, reported two cases operated on earlier in the year, with marked improvement.

Ibid., No. 17, April 28, 1894. The same writer gives the dates of his operations as April 2 and April 25, 1893, and reports a practical cure in each case.

British Medical Journal, September 16, 1893. Mr. C. Mansell Moullin wrote that "the question of castration as a means for procuring involution of the enlarged prostate, raised by Professor J. W. White in his address to the American Surgical Association, deserves more than passing consideration," and stated that he had discussed it with a patient in November, 1892. He adds that "one single instance in which definite reduction in size was proved to have taken place would be of incalculable value."

Ibid., September 23, 1893, Mr. Reginald Harrison wrote, "as bearing upon the correspondence that has followed Dr. White's remarks on castration in preventing growth of the prostate," that the suggestion had been made to him by a patient some years ago, and that as a compromise he had subcutaneously divided the vasa deferentia. He knew no more of the course of the case, except that the patient was alive and well six or seven years later, and that he had "thought nothing further of it until reading Dr. White's interesting lecture."

(In the discussion that followed the reading of my paper in Buffalo, Dr. Mears asked if division of the vasa deferentia might not accomplish the same result as castration.)

Ibid., September 23, 1893. Mr. MacMunn suggested that the sexual history, past and present, of the subjects of enlarged prostate be more freely studied, as well as the conditions of the gland in different races of men and the lower animals.

Ibid., September 30th. Mr. Moullin again called attention to the importance of getting definite information as to the effect of castration upon the abnormally enlarged gland in aged persons, as he says it must now be regarded as an established fact, not only for animals but for man, that "castration in early life prevents the full development of the prostate, and in adult life causes the normally developed gland to atrophy."

Ibid., September 30th. Mr. Griffiths called attention to Ramm's cases, and added, without allusion to my paper, that "this method of treatment is no doubt likely to suggest itself to anyone who has studied the nature and function of the prostate in its relation to the sexual function." He said further that it may in some cases prove an effectual remedy, but he went on to call attention to the lack of proof that prostatic enlargement depends on sexual excitement, which had not been asserted by anyone so far as I know.

Ibid., May 12, 1894. The same writer called attention to his own letter of September 30th, and sent a translation of Ramm's latest reports of his two cases already alluded to.

Ibid., November 18, 1893. Mr. Arthur Powell described a case that he said "might be of interest in connection with Prof. White's recent address," and in which a patient with retention of urine from enlarged prostate, having undergone removal of the right testicle for a nodule, and having a small left testicle, became impotent, and obtained relief from all his urinary symptoms. Rectal examination showed "marked diminution in the size of the prostate."

THE MEDICAL NEWS, Philadelphia, December 30, 1893. Dr. Francis L. Haynes, of Los Angeles, California, announced his first operation; this was followed by two others.

In the *Buffalo Medical and Surgical Journal* March, 1894, he thus describes his cases :[1]

Following the suggestion of Prof. White, of Philadelphia, I have three times made double castrations in old men afflicted with prostatic hypertrophy.

1. Operation eighty-four days ago, in a case of two-years' standing, of moderate severity. The patient is practically cured.

2. Operation forty-seven days ago, in a desperate case, requiring catheterization every two hours, complicated by intense cystitis and by morphinism acquired as a result of frightful suffering. With the most devoted nursing this old man has improved wonderfully. Cystitis has disappeared; one third of the urine is passed spontaneously; the catheter is used about every four or five hours; morphinism has been cured; general condition good.

3. Operation fourteen days ago. Incipient case; catheterization was almost impossible because of the peculiar development of the prostate.

In a fourth case section of the vas deferens gave no definite results.

During Christmas week, 1893, I saw in consultation with Dr. F. Fremont Smith, at St. Augustine, Florida, an apparently hopeless case of hypertrophied prostate with marked sepsis, cystitis, beginning uremia, etc. I advised a trial of castration, as the condition forbade any direct attack upon the prostate. Dr. Fremont-Smith has just reported the case in a paper read before the Genito-Urinary Section of the New York Academy of Medicine. The patient fifteen weeks after operation had gained forty-five pounds, and had no symptoms of cystitis or other urinary trouble. He urinated freely and normally.

On January 31, 1894, I operated on a medical man sixty-nine years of age, who had a very large prostate, about half the size of an orange; who had passed no urine except by catheter for years, whose urine was loaded with mucus, was offensive, and at short intervals was profusely mixed with blood. At the present time, fourteen weeks later, while he has not yet urinated spontaneously, rectal examination shows a reduction in the size of the prostate to about normal dimensions. It was formerly necessary to introduce the catheter for nine and a half inches before reaching the bladder; it now goes in only eight inches when the urine begins to flow. Its introduction is easy and painless, instead of difficult and very painful. No blood has appeared in the urine for two months. The urine itself is entirely normal in appearance, odor, and in all other respects.

I have during this time suggested the operation to three other patients, all of whom have declined it on account of my frank statement that it was yet in the experimental stage and that no *promise* of benefit could be given.

The idea of castration for the relief of prostatic enlargement seems to have occurred vaguely to several persons, but certainly no one had made it public or even formulated any distinct suggestion in regard to the matter prior to my paper.

Ramm's cases, though not published until between three and four months after my paper, appear to give him the operative priority in Europe, while Haynes undoubtedly did the first operation of the kind in this country.

This, so far as I know, is the evidence existing on this subject up to this date. It would certainly seem to establish the claim of the operation to further and much more extended trial, and it shows, I think, that even on a basis of experiment and theory alone I was justified in suggesting it to the profession.

[1] White's operation: Orcheotomy for Hypertrophy of the Prostate.

MEDICAL PROGRESS.

The Influence of Various Organic Matters upon the Bodily Temperature.—Roger (*Archives de Physiologie Normale et Pathologique*, 5e sér., t. vi, No. 2, p. 246) has experimentally determined that extracts of muscle contain thermogenic substances, although it could not be established whether these preëxisted in the tissues or were developed as a result of the manipulations employed. The total arterial blood, as a rule, induced a slight antithermic effect, although sometimes it displayed a thermogenic action, viz., when obtained from a sick animal, or from one exposed to cold; in the latter case, the effect disappeared when the animal was placed for twenty-four hours in a warm medium, or if a previous bleeding of about one-fourteenth of the total volume of blood had been practised. It was found that defibrinated blood, the serum, pleuritic exudates, and hydrocele-fluid induced elevation of temperature, sometimes preceded by a slight depression. Urine determined first a hypothermia, and secondarily a hyperthermia; the secondary effect was the more marked in proportion as the subject that furnished the urine had indulged in muscular exercise.

The Functional Activity of the Stomach after Resection of the Pylorus.—From personal observation, together with a study of the literature, Imredy (*Wiener medizin. Presse*, 1894, No. 13, p. 481) maintains that the dilated stomach may resume its normal proportions after the causative obstruction has been removed. This result takes place the more rapidly the shorter the duration of the dilatation. If in the resection a portion of the pylorus is permitted to remain this portion assumes the function of the whole, so that the stomach is as securely shut off from the intestine as it was before the operation. The motor function of the stomach also returns to the normal. Resorption and secretion take place with their previous activity, except in cases in which the resection was undertaken for carcinoma.

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OF MEDICAL SCIENCE.

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SATURDAY, JUNE 2, 1894.

THE THIRD TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THIS issue of THE NEWS is given up almost exclusively to the proceedings of the Third Triennial Congress of American Physicians and Surgeons, held at Washington, D. C., from May 29th to June 1st. During the short period of its existence this body has become one of the most important (from a scientific point of view *the* most important) in this country. Made up, as it is, of national societies representing all departments of medicine and of the highest grade of membership, the work of the Congress and of its constituent elements stands for what is best in scientific medicine in this country, and this work will compare favorably with that of any other body in any part of the world. The arrangements for this Congress and for future Congresses differ somewhat from those of the first two meetings. Instead of having the general sessions entirely independent and apart from the meetings of the various constituent bodies, it has been decided to assign three afternoons and one evening in sessions of an hour and a half each to seven of the fourteen participating organizations, and each society selected prepares its own program and selects its own speakers. The selection is made alphabetically, and the general sessions of the meeting just ended were in the hands of the following societies: Anatomists, Climatologists, Dermatologists, Genito-urinary Surgeons, Gynecologists, Laryngologists, Neurologists. The remaining seven societies are in like manner to prepare programs for the Fourth Congress. As far as the reports thus far received indicate, and judging from the arrangements made and programs prepared, the work of the Congress will amply sustain the high standard which it has established.

As usual, THE NEWS has taken special pains to give the fullest and most trustworthy reports of the Congress, made by its special staff of reporters. It is besides a source of gratification that THE NEWS has been chosen as the medium of a wider communication of a number of valuable papers to the general profession, synchronously with their presentation to the Congress. Others are to follow as soon as the exigencies of our space will permit.

SOCIETY PROCEEDINGS.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Third Triennial Meeting, held at Washington, D. C., May 29, 30, and 31, and June 1, 1894.

[Specially reported for THE MEDICAL NEWS.]

FIRST DAY—MAY 29TH.

THE Congress was opened with a brief address by Dr. LANDON CARTER GRAY, of New York, Chairman of the Executive Committee. Dr. Gray then introduced the President of the Congress, DR. ALFRED L. LOOMIS, of New York, who in a few remarks thanked the Congress for the honor that it had conferred upon him by electing him to the Presidency, but as the time allotted to the session was so short, he refrained from making any extensive address.

This session was under the direction of the Association of American Anatomists, and the subject selected for consideration was "Morphology as a Factor in the Study of Disease."

The discussion was opened by DR. HARRISON ALLEN, of Philadelphia, whose paper appears in the present issue of THE NEWS. (See page 589.)

DR. THOMAS DWIGHT, of Boston, said that Dr. Allen defines morphology as anatomy writ large. The underlying idea of his paper is to plead for a longer, broader, deeper course in anatomy. The tendinous heart-strings of every anatomist will vibrate in sympathy, producing a chorus of musical murmurs. Perchance, in some, one of the factors will be the moderator band of the ruminant, which has left its normal place near the apex of the human heart to cross near the middle of the right ventricle. The expert auscultator can recognize this cord. It is good for his patient that he should know from anatomy that such a band may be present and that its sound is no sign of even functional disturbance. The ophthalmologist is none the worse that embryology

teaches him the whereabouts of the hyaloid artery, which may persist throughout life. Anomalies, therefore, as well as slighter variations are of practical importance. The surgeon needs to know of the fibrous or muscular band which may cross the axillary artery, that the brachial artery may divide high up the arm (very rarely in the lower third), and that the diverging artery, be it radial or ulnar, almost always runs superficially. A third trochanter, which seems much larger than it is when felt through the soft parts, must not be mistaken for an exostosis, nor a deltoid tubercle of the clavicle for an old fracture.

Before removing a kidney the surgeon will do well to be sure that it is not the only one. I have myself within a few months seen a case of complete absence of one kidney, the other being of about the usual size and in its proper place.

But it is not necessary to turn to anomalies to support the need of a deeper knowledge of anatomy for the practitioner. The statics and mechanics of the skeleton and the action of the muscles are becoming daily more important to the orthopedic surgeon and to the neurologist.

The anatomy of childhood is still almost in its infancy. Though not quite helpless, it has not yet made its way into text-books, but hides itself bashfully in scattered papers and monographs. A more thorough knowledge would be of great value to the practitioner in children's diseases. How interesting and how practical, in view of infant-feeding, is the story of the rate of growth of the stomach in the first months of life, and how few know it.

My views of the esteem in which anatomy is held are far less pessimistic than Dr. Allen's. It is but too true that we have many in high places absolutely ignorant themselves of anatomy, who look on its progress with a jealous aversion; but they are mostly on the wrong side of fifty and they belong to a school of thought that is doomed. On the other hand, I look with confidence to the rising lights. I see in the better class of our young practitioners a great respect for anatomy. They have a clearer vision of its sphere. One of the most gratifying incidents of my professional life is the constantly increasing number of those who come to me for information on anatomic problems or for the means of solving them.

Surely, from what I have said I shall not be suspected of indifference to the cause if I do not quite agree with Dr. Allen as to the remedy. He would have students thoroughly instructed in the highest anatomy before graduation. I reply that there is no time. As a practitioner myself of twenty-five years' standing I am appalled at the amount of knowledge of all kinds which is now necessary for the simplest practice of the profession by anyone who would not fall behind his colleagues. I heartily agree with Huxley's saying that any one who adds one tittle that is unnecessary to medical education is guilty of a very grave offence. I would leave the matter to the good judgment and tact of the professor of anatomy. While his teaching should be eminently practical in the ordinary sense of the word, I would have him incidentally point out the explanations of structures from comparative anatomy and embryology, and still more insist upon the application of morphology to disease. But I would have these things pointed out rather than pursued. I would have him show the possibilities of anatomy, which, unfortunately, are impossibilities in the regular course. Thus he will enlarge the student's horizon. It is not necessary to have followed a certain line of research to know that it gives promise of great results. The mind of a student so trained will be in a very different state from that of his comrade who has been crammed with facts from a compendium. Advanced students and graduates are those to whom the highest anatomy will be most profitable, and the more so that they can see for themselves its value, which the beginner must take on trust.

DR. FRANK BAKER, of Georgetown, D. C., said that the study of the human organism, of its structure, its functions, its diseases, of the effects that various agents have upon it, therapeutically and otherwise, must necessarily be a study of life and its manifestations; it is a biologic science. The study of morphology as a preliminary to the study of disease is a necessity. The great impulse given to the study of anatomy by Vesalius and his followers in the sixteenth century has not yet exhausted itself. The error in the Vesalian anatomy, which has prevailed up to the present time, consists in considering the body as an essentially fixed organism. From this view arises the notion that anatomy is a fixed science, but even a cursory view of the history of the science shows this assumption to be baseless. To the modern biologist the human body is by no means fixed and invariable.

The human body has been studied far more than any other organic form. There is no lack of knowledge of details, but for the ordinary student these details are not classified and arranged as the results and sequences of morphologic laws. It may even be said that inflammation itself cannot be properly understood without a knowledge of the morphologic character of the tissues involved. The whole subject of tumors has, since the investigations of Virchow, been studied from a morphologic standpoint, and it has become evident that in order to understand their causes and their history, we must know more about the laws that control cell-formation and the growth of tissues.

The human body is built up of cells, and the gross variations in form must depend upon these minute cell-activities. These variations may be of all grades. The morphologist studies them as indicating slow modifications of the form of the human body. It is well known that the body of man is slowly changing, that adaptations are going on within it, slowly fitting it more and more to its environment. In this process there are constantly left structures that have ceased to be of value, and may properly be termed vestigial. Among such may be noted the vermiform appendix, Meckel's diverticulum, the thyroglossal duct, hypospadias, and the persistence of the choroidal fissure of the eye, producing coloboma.

The erect position of the human body was gradually acquired, and in many respects the body has not yet become perfectly adapted to this posture. The shape of the pelvis has necessarily become modified that it may support the weight of the viscera, yet with all this that weight is often a cause of hernia. As a result of these changes the pelvis of civilized woman is less adapted for easy parturition than that of her savage

grandmother of the stone age. Many of the abdominal viscera show signs of maladaptation. The cecum and ascending colon are not favorably situated. The liver, instead of being supported from the spine, is slung from the diaphragm, which, to support the weight, must receive strong connections from the pericardium and the fascia that supports the heart. This arrangement must interfere with the growth and expansion of the lungs. The heart itself works at great mechanical disadvantage. The valves of the veins are not adapted to the erect posture.

As the science progresses there is no doubt that many important generalizations will be made. Some already seem almost ready for statement. Among these is to be mentioned what may be called the law of stability. It is this, that the stability of a structure varies directly according to the time it has been functionally active in the ascending series of animal life. The structures most readily attacked by disease are those at either end of the scale of activity. The originally elementary tissues, epithelium and connective tissue, are the most stable, their derivations, nerve-tissue, muscle-tissue, glandular tissue, are the least stable.

Morphology is throwing light upon a vast variety of subjects connected with the domain of medicine, not only upon the causes of disease, but upon the action of cells, the problems of therapeutics, the very springs of life that underlie heredity, development, training, and education. It is a growing science, one that is destined to a great future, promising much for the elucidation of the highest problems of medicine.

DR. BURT G. WILDER, of Ithaca, N. Y., who regretted that he had been unable to prepare a formal paper, expressed his agreement with the statement of Dr. Baker that the human body is not to be regarded as a completed structure. It is by no means completed. The physician should consider very seriously whether it is not his duty to improve the human body in the direction in which it has been moving, namely by the obliteration of that most frequent source of trouble, the appendix of the intestine. It is the unanimous consensus of opinion among surgeons that the removal of the appendix, if not gangrenous, presents no great likelihood of mortality. It is now four years since Dr. Wilder proposed that we should not only practise vaccination, but also de-appendicize the child at a period of life when time was not very valuable, and thus improve his chances of existence.

Dr. Dwight has alluded to the impossibility of putting more in the curriculum of the schools, and with this Dr. Wilder thoroughly agreed. He held that there should be more morphology taught in the preliminary school-education, and he predicted that it would not be many years before most children, prior to leaving the ordinary college, will know as much anatomy, physiology, and morphology, in the broad sense, as is now possible to be obtained by the average physician.

(Continued on page 613.)

Cholera in Russian Poland.—It is reported by cable that cholera is raging in the districts of Plock, Radom, and Petrokoff, in Russian Poland. As a precaution against the importation of cholera an order has been issued to compel all Russians entering Prussia to come *via* Illowo, where the strictest sanitary regulations are enforced.

AMERICAN SURGICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Washington, D. C., May 29, 30, and 31, and June 1, 1894.

FIRST DAY—MAY 29TH.

THE Association was called to order by the President, DR. J. EWING MEARS, of Philadelphia, who delivered the President's Address.

In this he considered matters of interest to the Fellows of the Association referring to the previous work of the Association, and the methods of best carrying on the work of the society.

The Secretary, DR. J. R. WEIST, presented for the President to the Association a gavel, which had been made from a portion of the office-chair of Professor S. D. Gross, the founder of the Association. This was accepted, with the thanks of the Association.

The first paper was one entitled "The Surgical Treatment of Empyema," by Dr. JOHN ASHHURST, JR., of Philadelphia.

The following summary was presented:

1. No operation is justifiable unless the presence of pus is certain; unless thorough treatment by medicinal agents, blisters, etc., has failed; or unless the symptoms, dyspnea, etc., are so urgent as to demand immediate relief.

2. The first operation should consist of simple aspiration, with antiseptic precautions.

3. When the fluid has partially reaccumulated, as it almost certainly will do, if purulent, incision and drainage should be practised.

4. Drainage is best effected by making two openings, one at the lowest point, and carrying a large drainage-tube through the cavity from one opening to the other.

5. Drainage should be supplemented by washing out the cavity with mild antiseptic fluids; when the lung has expanded and the discharge has nearly ceased, the tube should be shortened, the upper opening being allowed to heal, and the tube then being gradually withdrawn through the lower opening.

6. When the lung is so bound down by adhesions that it cannot expand, resection of two or more ribs should be practised (Estlander's operation, so called) in order to allow collapse of the chest-wall and to promote healing by bringing the costal and visceral layers of the pleura into contact.

7. The more extensive operations of Schede and Tillmans, while probably justifiable in exceptional cases, are not to be recommended for general employment.

DR. CHARLES B. NANCREDE, of Ann Arbor, did not see the advisability, in cases in which pus was shown to be present by aspiration, of limiting the treatment to this operation. It is held that in a few cases this will be followed by cure, but he had never seen such a case. When pus is present he preferred to immediately provide for its permanent evacuation. He called attention to the danger of the drainage-tube becoming occluded by the pressure of the ribs, and he believed that in empyema of long standing some form of excision of the ribs should be employed.

In irrigation, if the pus is not too much contaminated, sterilized water is sufficient, but if necessary an efficient antiseptic solution may be used, and if there is fear of

absorption, the chest can afterward be flushed with sterilized water.

If provision is made for the free escape of pus, he had seen no necessity for the removal of large segments of ribs.

DR. T. F. PREWITT, of St. Louis, thought that the rule that no operation is justifiable unless the presence of pus is certain needed modification. As a rule, we can determine only that fluid is present, and cannot be sure whether it is or is not pus. He thought it advisable to aspirate even when serous fluid is present. If thorough antisepsis is maintained this can do no harm. He had never seen it result in the formation of pus, and this method greatly shortens the duration of the disease. In empyema in children he had seen several recoveries follow aspiration, but never in adults. In children the pus does not seem to possess that thick, clotting character so common in adults, and which requires a free opening. In empyema in adults he invariably resects a rib, sometimes two ribs.

Attention was called to the great necessity of caution in the administration of anesthetics in this affection.

As to washing out the cavity, he always does that, using a weak solution of mercuric chlorid.

DR. DEFOREST WILLARD, of Philadelphia, said that the whole question was one of thorough drainage of an abscess-cavity. Whether or not the ribs should be excised is to be determined by the question of securing free drainage. In children the ribs are so close together that removal of a portion of a rib is usually required.

In the early treatment he favored the use of a clean aspirator, rather than to compel Nature to cause the absorption of a large quantity of fluid. Such an operation does no harm, and saves several weeks in time.

He believed that washing, as a routine measure, did more harm than good. If the pus is decomposing, freer drainage is needed. If strong antiseptic solutions are employed there is danger of renewed inflammation.

DR. JOHN E. OWENS, of Chicago, called attention to the necessity, in evacuating pus from the chest or washing out the pleural cavity, of changing the position of the patient during the process, in order that all the pus may be removed.

DR. CHRISTIAN FENGER, of Chicago, held that there are certain cases in which Schede's operation is required, viz., after milder measures, such as incision, drainage, and Estlander's operation have been fruitlessly employed. He reported a successful case, in which this operation was performed after other measures had been unsuccessfully resorted to during seven years.

DR. ROSWELL PARK, of Buffalo, thought that the treatment of empyema should be based upon the same principles as are applicable to other abscesses. In acute cases presenting streptococcus and staphylococcus forms of suppuration, it may be sufficient in a few instances to simply aspirate. A large proportion of cases of empyema, however, are essentially cold abscesses, tuberculous abscesses. In these free incision, free drainage, and excision of a rib are required. In certain cases he had resorted to scraping with the sharp spoon, and in some he had cauterized the diseased surface with a 50 per cent. solution of zinc chlorid. He reported several cases in which death would have occurred had it not been for some such radical operation.

DR. W. H. CARMALT, of New Haven, asked how far it was justifiable to go in the way of resection of ribs in these cases. He reported a recent case in which he had removed portions of five ribs, the longest piece exsected being four and a half inches. In such cases it is necessary to remove enough of the chest-wall to permit of obliteration of the cavity. He had also used the sharp spoon in order to secure a fresh surface.

DR. M. H. RICHARDSON, of Boston, said that the questions that arose in the treatment of empyema were different from those in ordinary abscess, for in the former condition we have an abscess with rigid walls. With regard to drainage, he had used double tubes provided with valves, but considered them inapplicable, and liable to cause increased trouble, for when air or pus is forced out through the tubes by coughing, a vacuum is established, and the valve is held against the chest-wall, preventing drainage. He believed that Estlander's operation is applicable only to certain forms of cavity, and that there are certain cases in which the cavity involves a large portion of the thorax, and the operation of Schede is the only one applicable after a failure of Estlander's operation.

DR. STEPHEN F. WEEKS, of Portland, Me., thought that the rule of Dr. Ashhurst, to aspirate, especially in children, was a good one. Sometimes aspiration alone will result in cure. The tuberculous cavity is to be treated differently than the cavity in which tuberculosis does not exist. Thorough drainage is sufficient in many cases. He called especial attention to drainage by packing the cavity with sterilized gauze. In twenty-four hours he removes the gauze and washes out the cavity.

DR. L. MCLANE TIFFANY, of Baltimore, maintained that the treatment of acute empyema is of more importance than that of the chronic form, as it is the more common. The most important point, as bearing upon treatment and prognosis, is the character of the pus and its bacterial cause. The reason that the empyema of children often yields to aspiration is that in many of these cases the pus is simply a pure culture of the pneumonia-coccus. In the adult we rarely have the pneumonia-coccus form of suppuration. Here we have a mixed infection. If the empyema is of the amebic form the patient dies. If empyema is due to the streptococcus, the odor is offensive and the cavity needs to be carefully washed out. If empyema is due to the staphylococcus, washing out is not required. When there is time, Dr. Tiffany prefers to withdraw some of the fluid with the hypodermatic syringe and have it submitted to bacteriologic examination.

While he uses ether in general work, in these cases he prefers the use of a few whiffs of chloroform, which appears here to have a peculiarly happy effect. Only a very small quantity is employed.

The employment of respiratory gymnastics is of much benefit in favoring expansion of the contracted lung.

DR. JAMES MCFADDEN GASTON, of Atlanta, referred to the natural tendency for the empyemic cavity to open spontaneously in the anterior part of the chest. He reported two cases in which this spontaneous opening had occurred and was followed by recovery.

DR. W. W. KEEN, of Philadelphia, read a paper entitled "Amputation of the Entire Upper Extremity (Including the Scapula and Clavicle), and of the Arm at

the Shoulder-joint; with Especial Reference to Methods of Controlling Hemorrhage; with the Report of One Case of the Former and Four of the Latter."

He considered, first, those amputations that allow of simple disarticulation at the shoulder joint itself; second, those cases in which the axilla is invaded, yet only to such an extent as to allow of its being thoroughly cleaned out, followed by amputation at the shoulder; and thirdly, those in which removal of the entire upper extremity, including the scapula and clavicle, is required.

Simple amputation at the shoulder-joint. Here the control of hemorrhage is the key to the situation. The methods for the prevention of hemorrhage are, first, those applicable to the subclavian vessels, and, secondly, those applicable to the axillary. Most text-books recommend compression of the subclavian by the thumb, or a well-padded key. Dr. Allis has modified this method by substituting a stick, eighteen inches in length, with a pad of sterilized gauze at its extremity. This obviates the danger of slipping, and can be applied without fatigue on the part of the operator. Dr. Keen has suggested compression by means of a solid pad held in position by an Esmarch bandage passing over the perineum, but on trial in the case of a child this had proved unsatisfactory. A third plan consists in ligation of the subclavian artery. This is objectionable on account of the prolongation of the operation; also on account of the necessity of resecting the clavicle in order to ligate the vein, and if the vein is not ligated there is danger of the entrance of air.

Axillary methods. 1. Those in use prior to the introduction of Esmarch's tubing. 2. Different methods of using Esmarch's tubing Under the first head we have: (*a*) compression of the inferior flap by the fingers, which seize the vessels before they are cut; (*b*) Harvey's method, by compression of the vessels by means of a padded ruler thrust into the axilla; (*c*) ligation or seizure of the vessels with hemostatic forceps before they are cut; (*d*) Gross' compressor, but practically this is never used; (*e*) Furneaux Jordan's method, by making a circular amputation at the surgical neck, securing the vessels as in a hip-joint amputation, the bloodvessels having been compressed by an Esmarch band or other method, followed by disarticulation of the upper end of the humerus.

Under the second head are: (*a*) After making the antero-external flap, a stout pin is passed through the postero-internal flap, between the vessels and the bone, and elastic tubing is wound over the ends of the pin. In this method there is danger of the vessels retracting above the constricting band; (*b*) Esmarch's method, in which an elastic tube is placed in the axilla and drawn tightly over the shoulder, where it is grasped by the hand of an assistant. This is open to the danger of slipping of the bandage after disarticulation of the bone; (*c*) Morre's method. In this method the tubing is applied as in the Esmarch method, but is held in place by a bandage passing around the chest and under the tubing in front and behind; (*d*) Wyeth's method by pins and elastic tubing. In this method the operation is performed as follows: The arm is held at a right angle to the body. The sharp-pointed cylindrical pins, eleven inches long and one-fourth of an inch in diameter, are used. The anterior pin is introduced through the middle of the anterior axillary fold at a point a little nearer the body than what may be called the center of the fold transversely. The point of emergence is of much greater importance than the point of insertion; this should be one inch within the tip of the acromion. The second pin is introduced at a corresponding point, through the posterior axillary fold, emerging an inch within the tip of the acromion. The point of emergence is of importance, for if the pin emerges near or at the tip of the acromion, the moment the head of the humerus is removed the tubing is likely to slip downward and compress the two flaps against each other, thus hiding the cavity and permitting the vessels to retract. The pins being in position, a piece of rubber tubing is wound around the axilla and shoulder on the hither side of the pins. The disarticulation having been effected, the main vessels and all visible vessels are tied and the tubing removed the spurting vessels being grasped with hemostatic forceps. Dr. Keen considers this the most satisfactory method of controlling hemorrhage, and he felt confident that anyone who adopted it would abandon all other methods in its favor, except possibly in emergency cases.

Amputation at the shoulder-joint in cases in which the axilla is invaded so high that Wyeth's pins cannot be used. In 1812, Delpech proposed to make "an oblique incision extending from the external third of the clavicle to an inch above the inferior border of the great pectoral muscle. We thus discover and can cut near to its origin on the coracoid process of the scapula, the lesser pectoral. The index finger is carried through the cellular tissue, along the serratus magnus, then the subscapular, and it is used as a hook in order to draw outward the mass of vessels and nerves. The artery is found in the anterior portion of this mass." The artery and vein are then ligated. The advantages of this method are that it gives wide access to the axilla, that we can determine with ease how far and how great is the invasion of the axilla, and, if thought advisable, the operation can be abandoned at this point; or if it is decided to proceed with the operation, the incision already made serves as the inner part of the deltoid incision. Dr. Keen has employed this method with great satisfaction in a case in which a sarcoma of great size had invaded the axilla nearly to the clavicle.

Control of hemorrhage in cases in which it is necessary to remove the arm, the scapula and the clavicle. The methods that have been employed in these cases have been (1) simple compression of the subclavian artery; (2) compression of the artery after resection of the clavicle; (3) ligation of the subclavian prior to beginning the amputation; (4) resection of the middle half of the clavicle and ligation of the subclavian; (5) Wyeth first tied the artery, then formed his flaps, and, when the arm, clavicle, and scapula were connected with the trunk by only the veins and nerves, secured the veins and cut the nerves; (6) the artery and vein have both been tied after resection of the middle portion of the clavicle. The last seems to be by far the preferable method. Its advantages are that it prevents hemorrhage from division of the axillary and its branches, it diminishes the amount of blood lost during the operation, it prevents the entrance of air into the veins, it permits of a large opening of the space between the upper extremity and

the chest, and it enables us to divide the posterior attachments of the upper extremity, where the arterial circulation is still going on, at the end of the operation.

As a rule, recovery from this operation follows in from two to three weeks. The mortality in the more recent operations has been extremely low, one in fourteen. Again, by this method we can often amputate wide of the disease, by reason of the relative smallness of the flaps required. In view of these facts it was urged that in all cases of malignant disease of the upper extremity of the humerus, or even of the lower extremity when it is already diffused, we should not content ourselves with mere amputation at the shoulder-joint, but should at the same time extirpate the scapula and the clavicle.

Dr. Keen reported the case of a woman, aged twenty years, in which the arm, scapula, and clavicle were removed for myeloid sarcoma. The patient recovered, and was perfectly well six months after the operation.

Dr. Roswell Park, of Buffalo, said that he had in two cases successfully removed the entire upper extremity, in one for railroad injury, and in the other for extensive epitheliomatous ulcer. In the first case the clavicle was already broken, and the subclavian vessels were secured at the point of fracture. In the second case the clavicle was divided and the vessels tied.

Dr. Charles B. Porter, of Boston, in illustration of the rapidity with which malignant disease may advance, reported the case of a patient with sarcoma of the radius, whose arm was amputated above the elbow. The disease soon recurred, an amputation at the shoulder-joint was performed, and again the disease recurred, but so high up that no operation could be undertaken. The whole history of the case extended over only one year after the first operation. A case was also reported in which the arm had been torn off in a railroad accident and the scapula and outer portion of the clavicle had been subsequently removed by an osteoplastic resection, and the wound was closed with skin-grafts. Three months later a hard plate of bone had formed very similar in shape to the scapula.

Dr. John Ashhurst, Jr., of Philadelphia, said that he had once used the Wyeth pins satisfactorily in an amputation at the shoulder-joint. Another device to which he had resorted in several cases was to make the incision in the lower flap from without inward and secure the vessels in the wound.

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ASSOCIATION OF AMERICAN PHYSICIANS.

Ninth Annual Meeting, held at Washington, D. C., May 29, 30, 31, and June 1, 1894.

First Day—May 29th.

Dr. Reginald H. Fitz, of Boston, delivered the President's Address, taking for his subject the "Rise and Fall of the Licensed Physician in Massachusetts, 1781–1860." He pointed out that the first legislation concerning the regulation of medical practice in Massachusetts was enacted at Boston on May 3, 1649, than which there was none more stringent until the years immediately preceding the war of the Revolution.

In 1760 the city of New York had found it necessary to regulate the practice of medicine within its limits on account of the abundance of quacks preying upon the community. Five years later the Medical School of the University of Pennsylvania was established, and in the following year the New Jersey Medical Society was founded. In still another year the Medical School of Columbia College began its career; and in 1771 the colony of New Jersey passed its act regulating the practice of medicine, to be followed in 1774 by the abortive attempt in Connecticut.

The Massachusetts Medical Society was organized in 1781 with the express purpose of making a just discrimination between duly educated and properly qualified practitioners and those who ignorantly and wickedly administer medicine. For many years its Fellows acted most judiciously in endeavoring to include within their number every educated and moral practitioner in the State. They accomplished this largely by the force of example, association, and united encouragement. The State made them the sole source of licenses to practise. The progress of Thomsonianism left their responsibilities essentially intact. The advent of homeopathy found them weak where they should have been strong, short-sighted where they should have been far-seeing. The leaders were obliged to follow, and the reproval of the Censors prevailed against the wisdom of the Councillors.

Homeopathic diplomas and homeopathic certificates are now accepted by the Society. Homeopathic physicians have been found fitted to practise by the great public, which decides this question for all. Ten years of increasing intolerance destroyed seventy years of enthusiastic effort, devoted labor, tactful management, and wise council in the public interest. The State revoked the control of medical practice, and the people have been the sufferers. The history of Massachusetts in this respect is the history of the country. She was one of the last of the States to lay down the control, and she will be one of the last to resume it.

Dr. Beverley Robinson, of New York, read a paper on the "Treatment of Certain Symptoms of Croupous Pneumonia, particularly in Adults." He laid special stress upon the management of two symptoms of the first stage of the disease, namely, pyrexia and pulmonary congestion. He does not use the modern antipyretics, except in special cases. Phenacetin he regards as the best of these, for the reason that in addition to its antipyretic action it also induces sleep. The spirit of mindererus, potassium citrate, and magnesium sulphate he uses largely. Quinin, in doses of from 2 to 4 grains every three hours, is antipyretic. Cold sponging and cool baths are not especially efficacious; if the temperature of the patient is over 104°, and the pulse is rapid and delirium is present, a tub-bath may be advantageously employed. He has seen bad results, however, following immersion in a tub-bath; sponging, with friction, is preferable. The advantage of the bed-bath is the avoidance of shock and exposure, and the ease with which it can be given. The bath should last from fifteen to thirty minutes, and is to be repeated whenever the temperature is over 103°; prompt relief follows, the temperature falling to 100°

Aconite and aconitin act by diminishing the heart's action through its motor ganglia. The heart is slowed in a very alarming manner, and may be arrested in

diastole; gr. $\frac{1}{150}$ of aconitin may produce serious results; hence he does not believe in its use. The administration of small and repeated doses of antimony oxysulphuret, gr. $\frac{1}{32}$ every hour or two hours, is much superior to the use of aconite. It renders the sputum more fluid, and therefore easier of expectoration, and in this way diminishes the dyspnea. It is also well borne by the aged and by children. It may be used in both the first and second stages of the disease. Nitroglycerin, by the mouth, or better, hypodermatically, in doses of gr. $\frac{1}{50}$ or $\frac{1}{25}$, is an excellent remedy in this disease. It strengthens the weak pulse, removes the cyanosis, and relieves the dyspnea. Inhalations of oxygen in pneumonia usually give relief, but in some instances the dyspnea is increased by its use. Especially in cases of general edema have unfavorable results been noted. In failure of the right heart inhalations are, according to some authorities, of marked service, though the subject is still open for discussion. The abundant use of cold spring-water, Apollinaris, and other table-waters is of service in promoting diuresis and diaphoresis, and in this way reducing the abnormal temperature of the body. Alcohol is beneficial in many cases, not only on account of its nutritive value, but also because it aids the respiratory function. It also gives nerve-force, controlling the adynamia and nervousness. There are only two contra-indications to its employment, namely, when the patient is plethoric, and when there is hepatic engorgement and gastric catarrh. In these cases, small and repeated doses of calomel will act in the most beneficial manner. Digitalis or digitalin in small doses may be given to control an irregular heart; otherwise either is not to be used, on account of inducing vascular contraction. Strychnin by the mouth or hypodermatically, from gr. $\frac{1}{30}$ to $\frac{1}{15}$, is a very useful drug; at times, however, it may produce nervous irritability. Nitroglycerin acts by bleeding from the veins into the arteries, in this way taking the place of the old method of bleeding, which was often followed by excellent temporary results. In cases of threatened heart-clot, venesection, followed injections of salt-solution, may yield excellent results. Black coffee is of service when other remedies cannot be borne by the stomach, and may tide the patient over. Caffein does not replace the use of coffee for the reason that it is merely an alkaloid, and does not possess the nutritive value of the coffee.

DR. PEABODY, of New York, remarked that pain, with insomnia and cough, is an urgent symptom of croupous pneumonia, that could be controlled by the use of small doses of morphin hypodermatically, as gr. $\frac{1}{6}$, repeated once or twice during the night. He objects to the too frequent use of water in reducing the temperature. He has very rarely found heart-clot as a pathologic feature in this disease, and believes that many of the so-called cases of ante-mortem clot are in fact but post-mortem clots.

DR. J. C. WILSON, of Philadelphia, believed that, owing to the varied clinical manifestations of pneumonia, the treatment must be largely expectant and symptomatic. Cold baths have not been satisfactory in his hands. Local applications of cold to the chest have been advantageous in many cases. In sthenic cases, with delirium and other nervous manifestations, cold affusions of from one-half to one gallon of cold water, poured over the head and shoulders, will often act as the turning-point in the disease. Venesection proves beneficial in many cases of pneumonia by attenuating the toxemia and removing from the blood a quantity of effete material. He indorses the use of small amounts of opium, as, *e. g.*, gr. ij or iij of Dover's powder, from every two to four hours.

In concluding the discussion DR. ROBINSON remarked that the purpose of his paper had been to oppose the treatment of the disease by the use of the so-called "Trinity" pill or its modifications, and also to direct attention to the fact that drugs are often used without a full knowledge of their constitution or why they are used.

DR. SAMUEL A. FISK, of Denver, Colorado, presented a paper entitled "A Treatment of Typhoid Fever." He stated that the mortality of typhoid fever in Denver was much smaller than in other large cities. His treatment, he claimed, was attended with a shorter duration of the disease, and with marked amelioration in the symptoms, as proved by the comparative chart which he offered for examination. He believed that the average case of typhoid fever in Denver was milder than the average case in the East. During his treatment the patient had no tympanites, no dry tongue, no marked delirium, and but slight nervous manifestations. The treatment consists in absolute rest. If the patient is seen early in the disease one dose of calomel, gr. v, is given at night, followed in the morning by a saline. The diet is restricted to milk, of which a tumblerful is given every three hours. If the patient cannot take simple milk the fluid is peptonized, or buttermilk is given. He administers a turpentine mixture composed as follows: Oil of turpentine, f℥ij; castor-oil, f℥ij; bismuth subnitrate, ℥iv; and mucilage of acacia, a sufficient quantity. With this he maintains a moist tongue and stimulates the bowels. For the restlessness he gives a Dover's powder, gr. v, or McMunn's elixir of opium, ♏x. Water or ice is given freely. Antipyretics, including quinin, are absolutely interdicted. Whiskey is always given. Strophanthus is preferred as a heart-stimulant. Brand's cold baths are never used, and tepid sponging is not often employed.

DR. C. F. FOLSOM, of Boston, thought that the number of cases reported by Dr. Fisk was too small to generalize from. He believed that the cases included in the series were mild ones, and doubted whether the medicine had much influence upon the result.

DR. WILLIAM OSLER also thought that the treatment had had no influence upon the disease, and that the patients, evidently suffering from but a slight attack of the disease, needed no medicine, but would have recovered on the cold water treatment and good nursing.

DR. C. F. FOLSOM, of Boston, reported "Six Cases of Traumatic Headache," all relieved by the operation of trephining, the dura, however, not being opened. The patients were all affected with grave neuralgic pains centering in a lesion of the scalp, and associated with alterations in disposition, and in some instances with epileptic seizures.

DR. FREDERICK P. HENRY, of Philadelphia, made a "Clinical Report of Two Typical Cases of Raynaud's Disease." In one, hemoglobinuria was present; and in the second, scleroderma. He believes that neither endar-

teritis obliterans nor peripheral neuritis should be regarded as an etiologic factor in the production of the disease. The theory of arteriospasm is most probably correct, and especially does he believe this, as the disease is most common in women and girls, in whom vascular spasm is most common. The hemoglobinuria is due probably to the excretion by the kidneys of hemoglobin that has exuded in the asphyxiated parts. Hemoglobinemia often exists without the coëxistence of hemoglobinuria. The relationship between Raynaud's disease and chilblains has recently been studied, and the query has been raised whether the two are not different stages of a single necropathic dyscrasia.

Dr. Harold C. Ernst, of Boston, read a paper entitled "Dr. S. C. Martin's Researches on the Bacteria of Vaccinia." He stated that the late Dr. Martin had, by the use of a simple solution of fuchsin as a staining-reagent, discovered in the serum of cowpox a coccus and a bacterium. These two forms he demonstrated to be but different stages in the development of the same germ. Two inoculations made by Dr. Williams, of Roxbury, showed that from the pure culture in blood-serum, typical vaccinal effects were obtained in one case, and the successes with culture-inoculations in calves were numerous.

Dr. W. H. Welch, of Baltimore, spoke of the negative results obtained by others, and the extreme importance of the results. The work needs confirmation by others; the bacteriologic procedure is simple.

Dr. Ernst, in closing, said that the closest investigation had failed to discover any fallacy in the methods of Dr. Martin.

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AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Eighth Annual Meeting, held at Washington, D. C., May 29, 30, 31, and June 1, 1894.

First Day—May 29th.

The President, Dr. George Chismore, of San Francisco, read a paper on a "Modification of Bigelow's Operation for Stone in the Bladder, Designed to Meet Cases in which the Prostate is Enlarged." He called attention to the difference in the conditions present in the cases complicated by prostatic enlargement, to the intolerance of such patients to prolonged operative procedures and to trauma of the bladder.

In view of these facts, Dr. Chismore advocated, 1. Local anesthesia in preference to general anesthesia; 2. Short sittings; 3. Removal of any remaining fragments after the patient has fully recovered from the effects of the previous operation, and as soon as such fragments can be detected with the vesical sound. His procedure is as follows: The bladder is emptied, and from one to two ounces of a 4 per cent. solution of cocain hydrochlorate are injected. The lithotrite should be introduced as carefully as possible, and if spasm is present a short pause should be made rather than force the instrument in the face of this obstruction. As soon as the stone is found it should be crushed as rapidly as possible, but no prolonged search should be made for remaining fragments, as this adds very considerably to the gravity of the operation. Any evacuator may be employed, but Dr. Chismore employs a very simple one devised by himself.

Usually there are no after-symptoms, and the patient feels relieved at once. Occasionally there is some swelling of the deep urethra. If any fragments are left, the old symptoms gradually return. The operation of crushing these fragments may be done without anesthesia. Dr. Chismore still employs Bigelow's instrument in cases of hard calculi, as his instrument does not possess the strength requisite for crushing such stones. He maintained that in all cases of vesical calculus, complicated by enlargement of the prostate, the operation described offers every prospect of success; and that any stone which could be removed by perineal lithotomy may be crushed with less suffering and with greater success by this method.

Dr. J. William White called attention to the gravity attending the use of a general anesthetic in many of these cases, the effect of which was to cause congestion or actual inflammation of the already crippled kidneys. When the integrity of the kidney is open to question, he thought the method described would occupy an important place.

Dr. Francis Watson, of Boston, was inclined to consider the method a retrogression. The higher mortality of lithotrity over litholapaxy is due to the retention of the crushed fragments, and he was unable to see how the same injurious effect could fail to follow Dr. Chismore's method if some fragments were removed. He was, however, most favorably impressed with the statistics given, and theoretic objections must be withdrawn when such a good showing can be made. Dr. Watson advocated in the class of cases alluded to in the paper the method so strongly indorsed by Reginald Harrison, of performing perineal cystotomy and crushing and evacuating by this route.

Dr. William K. Otis, of New York, favored suprapubic lithotomy in cases of stone in the bladder, in the presence of considerable enlargement of the prostate gland, as this operation gives an opportunity to inspect the bladder and provides for drainage. In many cases, however, he thought Dr. Chismore's method would be very suitable.

Dr. John P. Bryson was struck by the statement made by Dr. Chismore, that he was able to dilate the prostatic urethra, adding that whenever he had attempted this so much irritation followed that he has given it up entirely. He employs the cystoscope with advantage in gaining definite information of the exact intra-vesical conditions present. He thought that local anesthesia is coming more and more into use, and in many instances is exceedingly satisfactory. He agreed with Dr. White that general anesthetics are in many cases dangerous. He thought, with Dr. Watson, that most of the fatal cases are due to traumatism of the prostatic urethra. Dr. Bryson was not inclined to regard remaining fragments with apprehension in these cases, inasmuch as the pouched condition of the *bas fond*, the presence of residual urine and the tolerance already established, make the bladder much more tolerant than under the usual conditions.

Dr. James Bell concurred with Dr. Otis in preferring the supra-pubic operation for stone in prostatic cases. He was struck by the large amount of cocain employed

by Dr. Chismore, and asked if toxic effects had ever been noted.

DR. EDWARD MARTIN called attention to the recently established fact that chloroform is equally as irritating to the kidneys as ether, and that its use, therefore, in patients supposed to have diseased kidneys cannot be considered free from grave danger.

In concluding the discussion, DR. CHISMORE stated that he had employed cocain-anesthesia in all operations for stone in the bladder since June, 1889. In a few cases he has noted a little pallor, restlessness, or nervousness, and a mild degree of intoxication, but never any symptoms that caused anxiety. In some cases he has used as much as eight fluidounces, but usually less than half of this quantity is employed. He prefers to operate in a small bladder, and therefore injects only an ounce or an ounce and a half. Attention was called to the fact that in the class of cases under discussion the bladder is very tolerant, and that an uncrushed fragment would cause less disturbance than insistance on removing the last particle by a prolonged search. He is gradually employing smaller and smaller instruments. A condition not usually recognized was described as catheter-stricture. This is usually a stricture of large caliber occurring somewhere in the middle of the pendulous urethra in those who are obliged to use the catheter habitually. The presence of this anterior stricture is likely to cause a spasm of the deep urethra on passing the lithotrite.

DR. J. WILLIAM WHITE followed with a paper on "A Summary of the History and Present Position of the Operation of Castration for Hypertrophy of the Prostate," which will be found in full in another part of this issue of THE NEWS (see p. 601).

In the discussion that followed, DR. L. BOLTON BANGS congratulated Dr. White upon the suggestion advanced, and considered the subject a most important one. Considering the relative frequency of enlarged prostate, and the uncertainty and unsatisfactoriness of the means for its relief, any treatment that promises relief from the great distress so often present must be recognized by every one as a great stride forward.

DR. BRYSON, alluding to the reference by Dr. White of the possibility of section of the vasa deferentia accomplishing the same result as castration, inclined to a negative view. He referred to the fact that after double epididymitis, although the vasa deferentia were practically cut off, no change was to be noted in the condition of the prostate. An interesting case was reported in this connection of a man, aged sixty-one years, who, eleven years previously, had consulted him for enlargement of the prostate, with six ounces of residual urine, and complicated with acute cystitis due to instrumentation. The cystitis improved, but six months later the man returned with tuberculosis of the right testicle. This was removed. One year later he again appeared with a similar condition of the left testicle. With a view of sparing the patient a portion of the diseased gland, he made an attempt to curet away the diseased portion after a cutaneous incision, but the organ was so disorganized that it all came away. At the end of a year there was a distinct diminution in the frequency of urination, the improvement being most marked at night. There was at this time evidence of tuberculous disease of the prostate and seminal vesicles. Fifteen months later the man declared himself free from all urinary trouble.

DR. BELFIELD reported the case of a young man, aged twenty-three years, who had both testicles removed for tuberculosis, and in whom the prostate gland had shrunk to a mere nodule.

DR. WATSON reported two instances of abscess of one testicle, in which the prostate underwent marked diminution in size on the side corresponding to the affected testicle, and slight decrease on the opposite side.

DR. MARTIN stated that he had had the opportunity of examining the patient upon whom Dr. White had operated, both before the operation and within a few days. Before operation the gland was as large as half an orange. At the recent examination it was found to have shrunk to the normal size.

In closing, DR. WHITE said, among other statements of interest, that before operation the patient whose case he had reported was obliged to pass the catheter nine and one-half inches before urine began to flow; while three weeks after operation the urine was drawn on passing the catheter eight inches. It is stated as a fact by horsemen, that if the cord is left long at the time of castrating a stallion the animal has much more life (spirit) than if the cord is cut short. This may have an important bearing upon the operation under discussion, and would teach that success is more likely to follow the operation if the cords are cut short.

The next paper was one by DR. SAMUEL ALEXANDER, of New York City, entitled "A Suggestion as to the Best Method of Removing Fibro-adenomatous Growths from the Prostate." The operation which Dr. Alexander has found so satisfactory in two cases is that recommended by Dr. Belfield, consisting in a supra-pubic and a perineal cystotomy. It was found by pressing the base of the bladder toward the perineum with the fingers in the supra-pubic wound, that it was easy to enucleate the nodular prostatic outgrowths. His experience would lead him to employ the method in any subsequent case in which operative measures were indicated.

The discussion was participated in by DRS. WATSON, BELFIELD, WHITE, BRYSON, BELL, BANGS, and CHISMORE. Drs. Belfield and Chismore stated that they had given up the use of Petersen's bag; the first because he had seen serious symptoms follow its introduction, and the latter because he had found it entirely useless. Dr. Bryson considers the rectal bag of distinct value. He prefers to introduce it and distend it with eight fluidounces of water before injecting the bladder. In injecting the bladder he uses a hand-bulb, as he is thus enabled to appreciate approximately the amount of intra-vesical pressure. He called attention to the very free hemorrhage sometimes encountered, and stated that its source was from the mucous membrane and submucous tissue.

DR. FRANCIS S. WATSON, of Boston, followed with a "Report of Some Cases of Rupture of the Urethra." Five cases were alluded to. The first was that of a seaman who had sustained a traumatic rupture of the pendulous urethra, a blow crushing the penis against the symphysis pubis. On account of the swelling the urethra was occluded and the urine, separating the skin from the deeper structures, worked its way backward to the abdominal wall, where it collected, making an artifi-

cial bladder. Rupture finally occurred externally. The treatment consisted in draining the infiltrated tissue, in performing perineal section, and finally in opening the urethra at the point of rupture and suturing first the urethra, then the corpus spongiosum and lastly the skin. Recovery was complete.

In the four other cases the rupture occurred during coitus. In one of these there was violent hemorrhage, in another, none whatever. In one case, owing to extensive infiltration, the entire skin of the penis and scrotum sloughed. The exposed surfaces were covered by skin-grafts in the manner recommended by Thiersch, with a most satisfactory result.

DR. GARDNER W. ALLEN, of Boston, presented a brief paper entitled "Remarks Upon the Treatment of Cystitis." Of internal remedies he expressed a preference for the saline diuretics. Locally, boric-acid solution is probably the most useful. Very gratifying results frequently follow the use of silver nitrate and potassium permanganate. If one fails, the other will frequently succeed. He rarely employs the silver solution stronger than 1 per cent. The permanganate solution should not be stronger than from 1 : 5000 to 1 : 4000 at first, but the strength may gradually be increased to 1 : 2000. In a very severe case, in which it was thought necessary to perform perineal cystotomy for drainage, injections of iodoform-emulsion produced the most marked improvement. The injections were made three times weekly in the beginning of the treatment, and later twice a week.

DR. MARTIN, stated that he has found tri-kresol a better antiseptic and less irritating than the substances usually employed in inflammations of the deep urethra and bladder.

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CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

(Continued from p. 606.)

SECOND DAY—MAY 30TH.

THE first portion of the session was under the charge of the American Climatological Association, and the subject chosen for consideration was "Sewer Gas."

DR. ALEXANDER C. ABBOTT, of Philadelphia, opened the discussion by a paper entitled "Chemical, Physical, and Bacteriological Studies of Air over Decomposing Surfaces, with Especial Reference to their Application to the Air of Sewers."

He said that a study of the literature of the subject leaves the impression that many of the opinions advanced are not based on exact methods of investigation. We are now tolerably well acquainted with the nature of the air of sewers, and we know that, as ordinarily found, it does not differ conspicuously from the air that we are accustomed to breathe. Studies in bacteriology demonstrate the comparative poverty of sewer-gas in bacteria. The general impression is that the air of sewers is under an active pressure and tends to force its way into the houses, but numerous experiments with pressure-gauges show that this is not the case. The studies upon the chemic, bacteriologic, and physical side of the subject, together with observations on the health of those constantly exposed to the emanations of sewage, are not of a nature to warrant the opinion that sewer-air is the dangerous factor that some believe it to be. There does not seem to be a single conclusive demonstration that the air of sewers stands in causal relation to the diseases for which it has been held accountable.

Among the problems that Dr. Abbott has endeavored to solve experimentally in the laboratory is whether or not it is possible to demonstrate on animals that the gases arising from sewage or from other decomposing substances have any direct effect upon the health of the animal or its ability to resist infection. The method of experimentation was given in detail. The teaching that, because materials containing organisms capable of producing disease are constantly gaining access to the sewers, the air of these sewers must of necessity also contain such organisms is simply an opinion, not supported by observations that justify its acceptation as a fact. The more conservative of those who believe in a causal relation between the air of sewers and pathologic conditions are coming to the opinion that this air is not directly concerned in the production of disease, but that its continuous respiration in some way interferes with the normal vital resistance of the tissues, and thus renders them more susceptible to infections to which they may be exposed.

Dr. Abbott detailed his experiments on animals and concluded that if experiments upon animals are of any value in demonstrating the positive or negative effects of air saturated with the gaseous products of decomposition, it does not seem reasonable to suppose that the air of a sewer or cess-pool, in the enormous dilution in which it exists at the time that it reaches an individual in a house to which it has access, can be of much importance, either in the direct production of the diseased conditions or in influencing the vital powers of resistance of the individual who inhales it.

DR. A. JACOBI, of New York, read a paper on "The Effect of Sewer-gas in the Production of Disease," embracing the following conclusions: The atmosphere contains specific germs, both living and dead, which are frequently found in places that were infected with specific disease. In sewers fewer such germs have been found than in the air of houses and school-rooms. Moist surfaces, such as the contents of sewers and cess-pools and the walls of sewers, while emitting odors, do not give off specific germs, even in a moderate current of air. Splashing of the sewer-contents may separate some germs, and then the air of sewers may become temporarily infected, but the germs will sink to the bottom again. Choking the sewers, the introduction of hot factory-refuse, leaky house-drains, and the absence of traps may cause sewer-air to ascend or be forced back into houses; but this complication of circumstances must certainly be rare.

Whatever arises from the sewer under these circumstances is offensive and irritating. A number of ailments, such, perhaps, as sore-throat may originate from this cause, but no specific disease will be generated by it, except under the rarest of conditions, for specific germs are destroyed by the process of putrefaction in the sewers and the worse the odor the less is the danger, particularly from diphtheria. The causes of this disease are varied and the search for the origin in an individual case is often unsuccessful. Irritation of the throat and naso-pharynx is a frequent source of local catarrh. This

creates a resting-place for the germs of diphtheria, which are ubiquitous during an epidemic, and thus an opportunity for diphtheria is furnished. Of the specific germs, those of typhoid fever and dysentery appear to be the least subject to destruction by cess-pools and sewers. These diseases appear to be sometimes referable to direct exhalation from privies and cess-pools. Fewer cases, if any, are attributable to sewer-air. A simple outlet from the sewer would be dangerous to the general health because of the density of the odors (not germs) arising therefrom. Therefore, very thorough and multiple ventilation is required. The impossibility or great improbability of specific diseases arising from sewers opening into our houses, but protected by good drains and efficient traps, must, however, not lull citizens and authorities into indolence or carelessness; for the general health will suffer from the chemic exhalations and the vitality of cell-life, and the power of resistance will be undermined.

Dr. Beverly Robinson, of New York, read a paper entitled "Sewer-gas as a Cause of Throat-disease, or the Effect of Bad Drainage on the Throat." Defective sewage may produce a sore-throat of a benign character, which affords a soil suitable for inoculation by the germ of diphtheria when present in the air. It is an admitted fact that the throat swarms with bacteria at all times, and possibly the bacillus of Löffler is occasionally among these; but these organisms are incapable of doing much harm if the individual is in good health. Through the depressing influence brought about by bad drainage, etc., they are capable of multiplying and increasing in virulence and finally causing infectious sore-throat. It is therefore clear how important it is to keep up an excellent condition of general health to avoid contracting disease of the throat. Proper disinfecting washes and gargles are also of value. While the connection between effluvia from sewers and drains and the condition of the throat cannot always be determined, yet in many cases it is clearly demonstrated. That many cases of tonsillitis are immediately caused by the air of sewers and fecal emanations scarcely admits of doubt. In some instances the cases of sore-throat have been confined to particular parts of houses, and when the bad sewage has been remedied they have ceased to recur. When cases of diphtheria, tonsillitis, or erythematous sore-throat occur in houses in which the plumbing is found to be defective, care should be taken not to ascribe these diseases necessarily to this cause. While throat-affections often occur where the drainage is bad, they may occur where the sewage is in perfect condition, or where there is no sewage at all.

The second part of the session was under the direction of the American Dermatological Association.

The subject for discussion was Leprosy.

The opening article was on "The Distribution of Leprosy in North America," by Dr. James Nevins Hyde, of Chicago. Reference was first made to the different ways in which leprosy could gain entrance into the United States. The northern part of the country has suffered far less than the southern, and even in the latter portion the disease is more common in the southern than in the northern districts. The United States is exposed to the entrance of leprosy from the four principal points of the compass—north, south, east, and west. That the total result up to the present time is insignificant has been due not to wisely directed vigilance, but rather to the general excellence of the habits, of the resources, and of the environment of the people.

At the present time the distribution of leprosy in the United States cannot be determined with any accuracy. The credit of being the first to collect statistics as to the number and location of lepers is due to the American Dermatological Association. According to these statistics and those of others, it may be said that the cases of leprosy in the United States have been distributed as follows: Arkansas, 3; California, 158; Dakota, 2; Florida, 6; Georgia, 1; Idaho, 2; Illinois, 13; Indiana, 2; Iowa, 20; Louisiana, 83; Maryland, 4; Massachusetts, 5; Minnesota, 120; Missouri, 2; Mississippi, 2; New York, 100; New Jersey, 1; Oregon, 3; Pennsylvania, 6; Utah, 3; Wisconsin, 20—making a total of 560. The accumulation of cases is found to be principally at points of commercial activity. The number of lepers in this country at the present time cannot be definitely stated.

These facts call for intelligent discussion and for wise provision looking after the needs of the unfortunate leper and for the safety of the community in which the infected are now living. Tuberculosis alone, at the present, exposes to a greater danger than leprosy the health of our population. The presence of leprosy in this country offers a constant menace to its inhabitants and constitutes a problem in state and sanitary science which the general government alone can readily solve.

Dr. James C. White, of Boston, read a paper entitled "The Contagiousness, Prophylaxis, and Control of Leprosy," in which he contended that the establishment of the proof of the contagiousness of a disease should be based upon the following points: 1. The history of its action upon communities or nations. 2. The study of its action upon individuals. 3. Its resemblance to other affections generally regarded as contagious. 4. The establishment of a satisfactory cause for such contagion. 5. The influence of control upon its history and course. These tests were then applied to the disease under consideration.

1. The history of its action upon communities and nations. Reference was made to its course in medieval Europe, where, introduced from the East, it became a pestilence of such overwhelming proportions that no influence of heredity alone could account for its spread. Belief in its contagious nature was then universal. In our own day, the extraordinary rapidity of the spread of the disease in the Hawaiian Islands can be accounted for on no other grounds than its infectious nature. The same is true of its introduction and spread in British Guiania, Trinidad, and other places.

2. The study of its action upon individuals. Great difficulty is here met with on account of the long period of incubation of leprosy, which may be of two, five, or even ten years' duration. Such a retardation of the tangible effects of the contagion renders direct historic proof in individual cases almost an impossibility. Again, the tissues of animals other than man thus far studied show themselves indifferent to inoculation-experiments. The possibility of using human tissues for such demonstration in satisfactory sufficiency is too remote for serious consideration. In one case a condemned crim-

inal was inoculated and three years later leprosy appeared. Reliance must, therefore, be placed upon a careful study of the beginning of endemics in small communities. Another kind of evidence is the acquisition of the disease by immigrants of non-leprous nationality into leprous countries. Of this there are many instances on record. Another important fact is the development of leprosy among the personal attendants of lepers. Of this several instances were cited.

3. Resemblance to other affections generally regarded as contagious. Under this head reference was made to the many points of resemblance between leprosy and syphilis and tuberculosis, and it was held that these strong resemblances suggested an intimate relationship in etiology and pathology.

4. Establishment of a satisfactory explanation of its contagiousness. With the discovery of the bacillus lepræ, the cause of the contagious nature of leprosy was demonstrated as clearly as was that of tuberculosis by the discovery of the bacillus tuberculosis. Leprosy is preëminently a bacillary disease, for this organism is found in profusion in the tissues.

5. Influence of control upon its history and course. In medieval Europe when the disease was regarded as infectious, the leper was segregated and placed in lazarettos. In later centuries, when the disease had been thus controlled and confined to a few districts, the belief grew up that the disease was not contagious, but was hereditary, and scarcely anyone thought of questioning this dictum. At the International Medical Congress in 1876, Dr. White called attention to the prevalence of the disease in the United States. In 1882, he again called attention to the subject in a paper presented to the American Dermatological Association. His conclusions that the disease was increasing to an alarming extent, and that it was contagious, at that time found few supporters, but since then professional opinion has greatly changed. A study of the disease in other countries shows that where laws for its control have been enacted there has been a great diminution in the number of cases, and that where it has been given free license, the number of cases has rapidly increased.

While not denying the possibility of the hereditary transmission of leprosy, Dr. White held that its apparent occurrence in any instance should not be accepted without the absolute demonstration of the impossibility of inoculation after birth. He believed the theory of heredity to be a dangerous one, and that the sterner judgment of the middle ages, which made the leper individually, rather than the progenitor, the responsible agent, must again be adopted before the affection can be exterminated.

With regard to the prevention and control of leprosy in the United States, the consideration of the following propositions was recommended :

1. Every physician should be compelled by State law to report to the nearest Board of Health the existence of a case of the disease, and neglect to do so on the part of the medical attendant, or a member of the leper's family, should be a penal offence.

2. Immigrants affected with the disease should be arrested at ports of entry and along our border, and turned back to their previous homes by the authority of the National Board of Health.

3. Graded hospitals should be established by the National Government, in insular localities, if possible, within which both suspected and confirmed cases should be confined, and to which all access should be prohibited, excepting under proper restrictions.

Such compulsory isolation may be considered cruel to the few, but its longer neglect on our part is certainly a greater cruelty to the many, for in no other way shall we exterminate this most miserable disease.

In the general discussion, DR. GEORGE H. FOX, of New York, said that whatever might be the result of inoculation-experiments he was sure that those who had given special attention to the study of leprosy would agree that the disease was communicable, but that the danger of infection from association with the leper is extremely slight. In the United States the disease has never shown any tendency to spread among those brought in contact with communities of lepers. He thought that there was no necessity for the segregation of the lepers to be found in the United States. To forcibly take these individuals from their homes would be an injustice which the slight menace to the general health would not warrant. Syphilis and tuberculosis are much more liable to be communicated to others than is leprosy. He believed that many cases of leprosy are amenable to treatment and capable of being cured, and he would be in favor of the establishment of hospitals for leprosy where these cases could be studied.

DR. JOSEPH D. BRYANT, of New York, advocated the institution of active measures because such a course would be a humane one as far as the leper is concerned; it would be conducive to public security and confidence, and it would secure good sanitation and better therapy. He offered the following propositions: (1) that a wise public policy and humane considerations demand that lepers be not permitted to associate with the unaffected; (2) that the exercise of local authority for their segregation is unwise and unsanitary, as establishing innumerable abiding places for the disease at great expense and without the assurance of proper surveillance; (3) that a safe, prudent, and humane policy demands that lepers be properly segregated under the care and control of the general government.

DR. WALTER G. WYMAN, Surgeon-General U. S. Marine-Hospital Service, read a paper on the "National Control of Leprosy," which will appear in a future number of THE MEDICAL NEWS.

DR. ARTHUR VAN HARLINGEN, of Philadelphia, dwelt upon the importance of all physicians studying leprosy so as to be able to recognize its earlier manifestations, which are frequently overlooked. He had good reason for saying that, notwithstanding the rigid quarantine-laws, many cases of leprosy had gained access to the country, although they had been subjected to some sort of an examination. This is due to a failure to recognize the early manifestations of the disease.

A paper on "The Diagnostic Features and Treatment of Leprosy," by DR. P. A. MORROW, of New York, was read by title.

(Continued on page 622.)

Dr. J. Madison Taylor has resigned the position of Clinical Professor of the Diseases of Children in the Medico-Chirurgical College.

Dr. W. W. Keen has been appointed a member of the Board of Visitors of the West Point Military Academy.

AMERICAN SURGICAL ASSOCIATION.

(Continued from p. 609.)

SECOND DAY—MAY 30TH.

DR. J. S. BILLINGS read a paper entitled "Methods of Teaching Surgery," which appears elsewhere in the present number of THE NEWS. (See p. 593.)

This was followed by a communication from DR. JOHN CHIENE, of Edinburgh, on "The Teaching of Surgery."

In discussing this subject one must begin with a warning; the personal equation, relating to himself, and the traditional equation, relating to his school, must be allowed for and discounted.

The teaching of surgery resolves itself into two divisions: 1. Systematic consideration of general principles, illustrated by clinical examples. 2. A clinical (bedside) opportunity given to observe, to use and to educate all the faculties, physical and psychic. Under either head the teacher must be a learner; the student must be a teacher. The teacher has constantly to warn the student against a blind belief and at the same time he has to speak most decidedly in giving his opinion. The practice of surgery, to be successful must be dogmatic. It has been objected to systematic lectures that, now that we have books, there is no need of a hundred lectures on any subject. Those who hold these views can never have known the stimulus of speech; can never have felt the electric impulse passing between hearer and speaker.

The method of teaching surgery in Edinburgh was then described.

A final word was added with reference to the teacher of surgery. Dr. Chiene believes in a fallow time, in a time of rest from mental activity. The best rest is change of scene. He suggested the advantages that would accrue from an interchange of chairs in the great English-speaking educational centers. In this way a teacher would once in seven years leave his alma mater for a session and speak to the students of another school. Or the fallow might take another aspect: give a teacher a session off every seven years and let him do in it what seems to him good.

The discussion of these papers was participated in by Dr. J. Collins Warren, of Boston; Dr. W. W. Keen, of Philadelphia; Dr. Hunter McGuire, of Richmond, Va.; Dr. Charles B. Nancrede, of Ann Arbor, Mich.; Dr. P. S. Conner, of Cincinatti; Dr. W. S. Forbes, of Philadelphia; Dr. Robert F. Weir, of New York; Dr. T. F. Prewitt, of St. Louis; and Dr. John E. Owens, of Chicago.

"The Surgery of the Kidney" was the title of a paper by DR. L. MCLANE TIFFANY, of Baltimore. Only those points were considered that offer opportunity for differences of opinion. In the human body bilateral organs are more than sufficient for the carrying on of life; not only may one such organ be removed without interfering with existence, but even the remaining organ may be more or less damaged and yet life be carried on. Any paper on the surgery of the kidney at the present day must take into consideration the influence of disease of the kidney on various operations in general surgery. The influence of anesthesia on the healthy kidney should be considered. In 150 cases of operation in which healthy kidneys were present albumin was found in the urine in only two per cent. of the cases after operation. Every case of railway accident and in some other cases in which the patients had been exposed for a certain time, showed albuminous urine on admission to the hospital. In these cases operation has not been deferred on this account. Cases of advanced diabetes have not been operated on. In cases with healthy kidneys the amount of urine passed in twenty-four hours following operation is diminished in quantity, the specific gravity being usually a little higher.

There is no good reason why the kidney should be separated from the rest of the body and require different surgical treatment. A kidney-wound should be exposed, sutured, drained, tamponed with gauze or a piece of it excised in injury beyond repair, or drained, as the case may be, and not the whole kidney sacrificed.

Nephritis and pyelo-nephritis (so-called surgical kidney) are generally met with by the surgeon and inflammation (organic) resulting from extention upward of inflammation from urethra or bladder due to the presence of bacteria; the bacteriology of the trouble in question is yet to be written. Of so-called pyelo-nephritis, beginning in the kidney, the most frequent cause is stone. The surgeon has especially to deal with the ascending inflammation from the urinary channel below, more often obstructive. The diagnosis is usually not difficult when the disease is advanced. In the early stages the difficulty of diagnosis is great; especially is it difficult to recognize whether the trouble affects one kidney or both. Here it is that the cystoscope offers a great opportunity. A moderate amount of urine, with a low specific gravity and an habitual low temperature, independently of the condition of the pulse, are danger-signals more important than any other. In the recognition of the kidney affected we have to rely on pain, pressure, and the cystoscope. The treatment before operation consists in exciting the kidneys to secrete by means of infusion of digitalis, potassium acetate, and infusion of buchu. Acid urine, and pus suggest pyelo-nephritis very strongly. It is Dr. Tiffany's habit not to operate until the patient's kidneys are acting well. After operation strychnin hypodermatically is a useful addition to the previous treatment. The hot-air bath has proved unsatisfactory in chronic cases. In acute cases it is beneficial. Free purgation is invariably of advantage.

When an operation on the bladder is called for, and there is evidence of disease of one kidney or decided pain in one kidney suggesting disease, that kidney should be operated on at the same time as the bladder. Twice Dr. Tiffany has done lithotomy for stone in the bladder, the lithotomy being done and the kidney opened at the same sitting. All went well. In two other stone-cases, acute suppurative inflammation took place within two weeks, and was followed by death.

DR. ROBERT F. WEIR, of New York, read a paper entitled "The Surgical Treatment of Surgical Kidney." He said that suppurative pyelo-nephritis, suppurative interstitial nephritis, and surgical kidney, are the ordinary names given to a disease that originates, as a rule, in the bladder, and that generally affects both kidneys. In this affection the kidneys are congested and studded

with foci of pus. Dr. Delafield states that "so far as I know, all cases die." While this may be the general result, Dr. Weir reported a case showing that some modification of this prognosis must be made.

A man, twenty-five years old, was admitted to the surgical wards of the New York Hospital on April 2, 1894, with a history of having suffered, four years previously, from an attack of scarlet fever, followed by nephritis. About one year ago he had a mild attack of urethritis. Three months ago he had a severe attack of urethritis, the inflammation also invading the bladder; gonococci were present in the discharge. This gradually subsided under treatment. Twelve days prior to admission to the hospital he had, without assignable cause, a chill, followed by fever. The following day there was pain in the loins, with subsidence of the fever, but the next day the temperature reached 103° F. There was no increase in frequency of urination. The lumbar tenderness gradually increased. He was admitted to the medical wards of the New York Hospital on March 28th; during the next seven days he had four chills, the temperature ranging between 103° and 105°. The patient was seen by Dr. Weir on April 3d. His condition was a most serious one. The urine contained pus, and was fifty or sixty ounces in amount. There was pain in the right lumbar region, with tenderness on pressure. It was thought that some enlargement of the right kidney could be made out. The impression made was that there was an abscess of the kidney, or possibly several sacs of considerable size. It was not thought that the condition was one of "surgical kidney," on account of its one-sided character. On April 4th the kidney was exposed in the usual manner. Puncture in two or three places gave no evidence of pus. An incision was made into the kidney, disclosing numerous miliary abscesses, showing that there was the ordinary surgical kidney. It was then decided to extirpate the diseased organ. Immediately after the operation the temperature fell from 105° to 99°, and the patient made an uninterrupted and rapid recovery, being discharged on April 20th.

It is difficult to say how often the affection is limited to one kidney, but such limitation may not be infrequent. Even when both organs are involved it may be that something can be done for the relief of tension and the egress of pus by the means of a free incision made into the kidney-substance. With the happy experience of this case, Dr. Weir considered it hereafter justifiable, if the patient's general condition warrants it, in a case of acute septic invasion of the kidneys, to make on one or both sides an exploratory incision, not only in the hope of relieving the acute interstitial invasion, but also perhaps of encountering a larger and well-defined focus of pus—a pathologic condition that cannot always be readily discriminated from the more dangerous lesions of the veritable surgical kidney. Should the symptoms point, as in the case narrated, to one kidney only, or should a double exploratory incision yield the same result, a nephrectomy may with some hope be resorted to.

The next paper was on "Surgery of the Ureters," by DR. CHRISTIAN FENGER, of Chicago. He said that accidental wounds and subcutaneous ruptures of the ureter have not as yet been objects of direct surgical procedure upon the ureter at the seat of lesion. Catheterization of the ureters from the bladder for the purpose of diagnosis has given valuable information. The procedure is reasonably practicable in the female. In man catheterization is practicable only through epicystotomy. Catheterization of the ureter from the bladder as a curative measure for the evacuation of a hydronephrosis or a pyonephrosis has occasionally been performed. This is more difficult and uncertain than nephrotomy and the attempt to find and remedy the stenosis of the ureter from the pelvis of the kidney. Dilatation of strictures of the female ureters through the bladder by means of elastic bougies has been tried with temporary success, and through the pelvis of the kidney successfully. Permanent catheterization of the ureter through the bladder, a fistula or implanted ureter is often tolerated only for a limited time and must be attempted with caution. Uretero-lithotomy by the extra-peritoneal method is a safe operation. Intra-peritoneal ureterotomy should be done only when access outside of the peritoneal cavity is impossible, and should be completed by careful suturing, covering with omentum or peritoneal flap and drainage.

Opening the peritoneal cavity to locate the seat of stone may occasionally be necessary, but when the diagnosis is once made ureterotomy should be done by the extra-peritoneal method. In valve-formation or stricture of the ureter causing pyonephrosis or hydronephrosis or a permant renal fistula, nephrectomy should be followed by exploration of the ureter. This is to be effected by a long, flexible silver probe or an elastic bougie. The size of a bougie that will pass a healthy ureter is from No. 9 to No. 10 of the French scale. Operation for valve-formation should be done through the wound in the pelvis. A stricture in the ureter, if not extensive, can be treated by a plastic operation. Resection of the upper end of the ureter and implantation of the distal end into the pelvis has been done with success.

Uretero-uterine fistulas can be treated satisfactorily by plastic closure of the vagina or by nephrectomy. Implantation of the ureter into the bladder is, under favorable circumstances, the operation of the future for this condition. Uretero-vaginal fistulas should be treated by vaginal plastic operation for displacement of the distal end of the ureter into the bladder.

Complete transverse wounds in the continuity of the ureter should be treated by uretero-ureterostomy after the method of lateral implantation if possible. Complete transverse wounds of the upper end of the ureter should be treated by implantation of the ureter into the pelvis of the kidney. Complete transverse wounds of the ureter near the bladder should be treated by implantation into the bladder. Loss of substance of the ureter too extensive to permit of uretero-ureterostomy or too high up to permit of implantation into the bladder may be treated by implantation on the skin or into the bowel. Implantation into the bowel is objectionable. Implantation on the skin in the lumbar region may have to be followed by secondary nephrectomy; this procedure, however, is much less dangerous than the primary operation.

The discussion of these papers was postponed until Thursday morning.

(To be concluded.)

ASSOCIATION OF AMERICAN PHYSICIANS.

(Continued from page 611.)

Second Day—May 30th.

Dr. Theobald Smith, of Washington, read a paper on the "Modification, Temporary and Permanent, of Physiological Characters of Bacteria in Mixed Cultures." He dwelt on the antagonism between living bacteria and the products of their activity in the body, and considered the effects of concurrent inoculation in one animal of the germs of two diseases, as hog-cholera and tuberculosis, or of two varieties of one germ. He showed that when the bacilli of hog-cholera as occurring in different portions of the country are mixed and the product of this mixed culture is injected into an animal, the virulence of the disease is diminished. He also stated that when the virulence of hog-cholera is once diminished, it took as long for that virulence to be restored as it had taken for it to be destroyed. He thought that the typhoid-like lesion of hog-cholera is a result either of an attenuation of the virus or of increased resisting power of the animal.

"The Effect of Various Metals on the Growth of Pathogenic Bacteria" was the title of the paper read next, by Dr. Meade Bolton, of Baltimore. In a series of investigations he has found that certain metals have no marked effect on the growth of bacteria, while others display certain peculiar actions. Metals readily attacked by the chemic reagents possess a marked inhibitory action on the growth of bacteria, and this is due to the fact that the metals are dissolved, and are brought in a soluble form into contact with the bacteria, and in this way the clear zone around the metal is produced.

Dr. Welch, of Baltimore, expressed the opinion that in the intensified ring immediately surrounding the clear zone there is a minimum amount of the metal, while in the clear zone around the metal there is an excess of the soluble oxid of the metal. He was unable to explain the formation of the clear zone surrounding the intensified zone.

Dr. W. Gilman Thompson, of New York, presented a "Note on the Observation of Malarial Organisms in Connection with Typhoid Fever." He stated that in the South typhoid fever in all of its clinical manifestations seems to be more or less complicated by malarial fever, while in New York and the North generally, it is quite rare to find such a complication. He reported three cases of typhoid fever thus complicated. He thought that in those individuals who have been subject to malarial paroxysms the pathogenic organism frequently takes advantage of the patient's reduced condition and manifests its presence during these periods of depression. He would offer this suggestion as a possible explanation of the occurrence of the malarial complications of enteric fever. While he believed that it would be unwise to accept the term "typho-malarial" as representative of a third form of disease, he is confident that the two diseases may coëxist in the same patient.

Dr. William Osler, of Baltimore, thought it a mistake to regard all cases of typhoid fever attended with chills as complicated with malaria. Chills are quite common in typhoid fever, and in the cases in which they occur, examination of the blood shows a freedom from the germs of malaria. He stated that he had seen a case of croupous pneumonia complicated by malaria which was controlled by the use of quinin.

Dr. G. M. Sternberg, of Washington, considered the so-called cases of typho-malarial fever occurring over the country as mild cases of typhoid fever.

Dr. J. C. Wilson, of Philadelphia, thought that the term typho-malarial has done incalculable harm in delaying for more than a generation a clear knowledge of the fevers of the South. It is also an unfortunate term, in that it has concealed obscure cases of true typhoid fever and prevented the observance of proper prophylactic measures. He hoped that the Association would not permit itself to go on record as sanctioning a return to the old term of "typho-malarial."

Dr. Frederick C. Shattuck, of Boston, suggested the probability of the existence of inflammation of some of the internal veins as the cause of the chills of typhoid fever.

Dr. Reeves, of Chattanooga, thought it probable that there is a species of fever intermediate between typhoid and malarial fever, to which the term typho-malarial is applicable. Cases thus affected have no diarrhea, no epistaxis; there is a typical rise and fall of temperature, and the course of the disease throughout is different from that of typhoid fever. Typho-malarial fever occurs most commonly among children.

Dr. George Dock, of Ann Arbor, remarked that the common view held is that typho-malarial fever is milder than true typhoid fever; he does not believe that this view is correct. He had failed to discover any case of typho-malarial fever while practising in Texas. It is a mistake to think that the term "typho-malarial fever" is used only in the South. He has repeatedly met with cases so designated in the North which were, in fact, cases of true typhoid fever.

In closing, Dr. Thompson said that he would emphasize the value of routine examinations of the blood in all cases of fever, and the administration of quinin in those cases in which the malarial organisms were discovered.

Dr. George Dock, of Ann Arbor, read a paper entitled "Experiments in Artificial Melanosis." He said that he had been led to make these experiments because of the recognized difficulty in determining the relationship existing between phagocytosis and malaria. He had repeated Ponfick's experiments in the hope of learning more of this interesting process. He employed lampblack in place of cinnabar, which was used by previous experimenters. A suspension of lampblack in a physiologic salt-solution was injected in animals, and sections of the organs made immediately after death. The injecting fluid was made as dense as possible, and injections of two drams were made into the veins of the legs of dogs. The animals were allowed to live one or two weeks, when they were killed. In some instances eight successive injections were made in as many days, so that considerable pigment was introduced into the circulation. In dogs the leukocytes are largely polynuclear cells, closely resembling the polynuclear cells of man. The pigment was found in the circulation within an early period, but it was not found in the leukocytes before fifteen minutes had elapsed, and usually not before thirty minutes. The results were always the same, namely, the pigment was found only in the polynuclear cells. The pigmented leukocytes

circulated for from one to three days. The pigment was found in the largest quantity in the lungs, next in the spleen, and finally in the liver. In the other organs the amount was very small or the pigment was entirely absent. There was very little found in the kidneys and lymph-glands; there was usually none in the brain, and in the intestines and stomach there was very little found. Most of the pigment in the organs was found, as elsewhere, in the polynuclear cells. A curious feature was the distribution in the liver. The pigment in that organ was at first found in the portal area, and here it remained for some time, free in the hepatic capillaries. Later it made its way toward the central vein and the radicles leading into this vein, forming in this way a stellate arrangement. The pigment in this organ was not only free, but also apparently was found in the endothelial cells, and also in the cells of Kupfer.

DR. THOMAS M. ROTCH, of Boston, presented a paper on "Some of the Chemical and Bacteriological Characteristics of Milk." In order to arrive at a more accurate knowledge of the composition of human milk, he had collected a liter and a half of milk freshly drawn from the breast. This had been submitted to a chemist for estimation as to its mineral constituents, and the presence of silicon and other constituents in milk had for the first time been demonstrated.

(To be concluded.)

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

(Continued from p. 613.)

SECOND DAY—MAY 30TH.

The business meeting was held at 9 o'clock A.M., when the following officers were elected for the ensuing year: President, L. Bolton Bangs, of New York City; Vice-President, Francis S. Watson, of Boston; Secretary, William K. Otis, of New York City; Member of Council-at-Large, Dr. J. A. Fordyce, of New York City.

The next meeting of the society will be held at Niagara Falls during the last week of May, 1895.

The usual morning session was called to order at 10 o'clock.

The first speaker of the day was DR. WILLIAM K. OTIS, of New York City, who read a paper entitled "Aëro-urethroscopy with a New Instrument." Attention was called to the unsatisfactory results attending the use of the ordinary urethroscope. Von Antal in 1887 conceived the idea of distending the urethra with air, which would thus permit of the inspection of every portion. Dr. Tilden Brown independently devised an instrument for the same purpose. The instrument of Brown has been modified by Fenwick. Dr. Otis has further modified the instrument so that it is light in weight and much simplified in construction. Although this is a distinct advance in urethroscopy, the view is still not so satisfactory as could be desired. It is serviceable in certain cases, however, that have heretofore been most difficult to treat.

In view of the fact that the instrument for catheterizing the male ureters has not been completed, Dr. Otis withdrew the formal paper on that subject, and described briefly the principle of the new instrument.

DR. BELFIELD showed instruments for inspecting the deep urethra and the neck of the bladder in the region of the trigone.

DR. EDWARD MARTIN concurred in the remarks of Dr. Otis on aëro-urethroscopy. Respecting catheterization of the male ureters, his experience has not been uniformly satisfactory.

DR. F. TILDEN BROWN, of New York City, described "New Instruments and Apparatus." The first instrument was a silver spring-catch, to hold the catheter in place in cases in which it is necessary to maintain drainage after perineal cystotomy. The catch is held in place by tapes. The second instrument was an improved needle-holder for Hagedorn's needles. The next was a modification of Clover's crutch. It has a rectangular bar, and is composed entirely of metal and canvas straps. The strain usually borne by the neck is transferred to the shoulders, and is thus much less irksome. An appliance accompanies the instrument to keep the feet out of the field of vision in class-room demonstration.

In the discussion, DR. BRYSON said that he has found that the best method of draining the bladder through the perineum is by means of an instrument with an eye similar to that in Bigelow's evacuator.

DR. WILLIAM H. HINGSTON, of Montreal, Canada, read a paper on "Stone in the Bladder; Choice of Operation." He dwelt particularly upon the much wider applicability of litholapaxy than was formerly thought to be the case. He believes that in disease of the bladder, or of the kidney, or in the presence of unhealthy urine, the lithotrite is as safe as the lithotomist's knife. Neither is old age or youth a contra-indication: "Lithotritize (Bigelow's operation) in all cases of adults if the stone is not too large or too hard; lithotritize in adults if the urethra is or can be made of proper size to admit the instrument; lithotritize all children if an instrument can be passed." The capacity of the urethra in the child is greater than inspection would indicate. In old age, if a cutting operation is necessary on account of enlarged prostate or tumor, the supra-pubic operation should always be resorted to. In other cases the lateral perineal operation, when applicable, is the best of the cutting methods.

In the discussion, DR. CHISMORE coincided in most respects with the views expressed by Dr. Hingston. Particular stress was laid upon the advantage of the supra-pubic route in cutting for stone in cases with enlarged prostate glands.

DR. BANGS stated that in some of these cases it is necessary not only to remove the stone, but also to treat the stone-disease. For this reason he thinks it frequently becomes necessary to do some cutting operation for the purpose of draining both the bladder and the kidneys.

DR. WIILLIAM JUDKINS reported the case of a boy from whom he had removed a vesical calculus by the supra-pubic method. On the second day pneumonia developed, and on account of the coughing and straining some of the stitches gave way. However, the patient recovered, and some time later passed *per urethram* a stitch covered with a phosphatic deposit. There is now a repetition of the vesical irritation, and it is probable that other stitches have found their way into the bladder and that they are causing the symptoms.

DR. JOHN P. BRYSON, of St. Louis, read an article

entitled "Urine-leakage and Stricture-formation." Attention was called to the erroneous description of the histology of the tissue composing strictures of the urethra, and the tissue surrounding urinary fistulæ, as heretofore given and so widely copied. Drawings from microscopic sections of the two tissues exhibited showed that in each the essential conditions are the same; the minor differences are only such as may well be explained by differing conditions. The following conclusions were expressed:

1. The close resemblance in the tissue-elements, their arrangement, and effects upon the related normal structures point to the identity of the etiologic factor and give support to the doctrine of urine-leakage.

2. Observing the prolongation of the urethral epithelium on the fistula-wall, in an effort to create an adequate artificial channel for urine, and seeing that the epithelium lining the stricture also participates in the battle against urine-leakage, we may take fresh hope of radically curing strictures, even of the pendulous urethra, by such means as tend to restore or rehabilitate the urethral lining.

3. Merely diverting the stream of urine for a time, without such restoration of the lining mucous membrane, would fall into the category of palliative treatment, along with urethrotomy and the various methods of dilatation.

DR. J. BLAKE WHITE, of New York City, next read a paper upon the subject of "The Possibility of Overcoming Permanent Stricture of the Deep Urethra without resort to External Urethrotomy." He called attention to the frequently-observed fact that an anterior stricture of large caliber, or a contracted meatus, will cause spasm of the deep urethra, which will effectually prevent the passage of any instrument. Two cases were reported, in each of which, although intense spasm existed, deep organic stricture also was present, appearing to demand external perineal urethrotomy. The spasm was found to relax completely on enlarging the meatus to the proper size. The treatment of the deep strictures by gradual dilatation could then be proceeded with.

In the discussion, DR. EDWARD MARTIN assented to the views expressed by Dr. White. He thought too frequent recourse to the knife had been the tendency of recent years, and he related cases affording convincing proof of the value of dilatation, up to full size, in the treatment of stricture.

DR. BRYSON also thought that division is practised in the treatment of strictures with unnecessary frequency.

DR. ALEXANDER W. STEIN, of New York, presented a communication upon "Some Infrequent Symptoms of Disease of the Urinary Tract." He referred to cases of membranous casts from the bladder and urethra. The cause usually given is retention of urine. Of fifty reported cases, forty-five were in women and five in men. The causes of retention in the females was either a retroverted uterus or pressure of the child's head during prolonged parturition. The prognosis is usually good; of forty-five cases, but nine terminated fatally. The case was reported of a man, twenty-six years old, who had frequent attacks of renal colic on the left side, and who on one occasion had retention for twenty hours; finally he passed a stone *per urethram* with relief of the retention. The attacks of renal colic continued. Later, he was subjected to litholapaxy for stone in the bladder. Still later, he began to pass "fleshy" masses of large size. The urine was loaded with pus and was offensive. Improvement followed antiseptic irrigations of the bladder. The patient was lost to observation, and it was reported that he afterward died. The cause of death could not be learned, but as the termination was preceded by stupor, it was possibly uremia.

(To be concluded.)

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Sixteenth Annual Session, held at Washington, D. C., May 30th, 31st, and June 1st.

FIRST DAY—MAY 30TH.

DR. D. BRYSON DELAVAN, of New York, delivered the President's Address.

He pointed out that the history of the Association is in reality the history of laryngology, for Manuel Garcia, the discoverer of the laryngoscope, is still living, while the list of Corresponding Fellows has contained the names of the most distinguished specialists of the age. The laryngoscope was first introduced into this country in 1860. Sixteen years later its use was taught in twenty-five different institutions, and this special line of work had attained a position of acknowledged responsibility. In 1878 the inaugural meeting of the Association was held in Buffalo, and its first President was Dr. Louis Elsberg.

The foundation of the Society was a pre-conceived movement in the direction of a higher and broader education. It was a vigorous effort to advance and disseminate the knowledge of laryngologic work. The meetings have always been well attended, the papers contributed scientific, and the discussions vigorous. These facts are attested by the fifteen creditable volumes of *Transactions* for which this Society stands sponsor. The honor of establishing the first laryngological society, either here or abroad, belongs to New York city. This Society (The New York Laryngological Society) was founded in October, 1873, at the suggestion of Dr. Clinton Wagner. The effect of centralized effort, of that healthful competition which is the inevitable and invaluable result of the free intercourse and friendly rivalry made possible by these societies, has nowhere shown its influence more conspicuously than in England. In that country the study of laryngology has been advanced with the energy and enthusiasm of a true renaissance. It is therefore a great satisfaction that this strong and onward movement has seen America in the van; but this very success imposes its own peculiar responsibilities, and if we are to maintain our present position we must still strive for superiority.

Coincident with the growth on the practical side of laryngology has been its increased recognition in the columns of the general medical journals, in the establishment of journals devoted to the special work, and in the production of a large number of epoch-making treatises.

The motto of this Association is "*Docendo discimus*—by teaching we learn." To reach the higher usefulness we must be teachers, and the maintenance of the high place which the Association at present occupies necessitates the thorough carrying out of this idea. We must

qualify ourselves by absolute purity of purpose, oneness of aim, and actual scientific superiority. Then we must proceed to study and carry out such plans as shall place the greatest amount of sound learning in the hands of the largest number of well-qualified men. The question of education, in other words, is by far the most important problem before the medical profession to-day. In it are involved all hopes for the future, not only as to professional reputation, but also (what is of far more importance) as to the beneficent ends to which it is hoped laryngology may attain. The most opportune office of the Association has always been and always must be teaching. The very fact that its membership includes the leading teachers of this country imposes the obligation to the profession at large, which cannot be under-estimated, and still less cannot be set aside.

Undergraduate instruction has in this country reached a high degree of perfection, and at least one institution stands concededly superior to any other, both as to its plan of instruction, its equipment and its general discipline; but many other schools also, in different parts of the country, are doing good work. This question, therefore, of instruction, so far as it relates to undergraduates, may be said to have been fairly considered and successfully met.

But undergraduate institutions have at points failed to answer all the needs of the higher medical education, and there have, therefore, sprung up the various schools of instruction for graduates. It is in this way that laryngology has received a startling popularity, to which the great growth of special literature has largely contributed. The problem thus created is perhaps the most important one of to-day, and it cannot be so easily solved as has been that of the undergraduates, because the students at these graduating schools present a vastly greater variety of personal needs and professional attainments. They are in addition frequently hampered in their progress by pre-conceived ideas that have been honestly derived from their own professional experience. The meeting of these diversified needs imposes upon the instructor a weighty task. The ideal instruction for graduates pre-supposes three things: (1) a higher and more thorough general medical education on the part of the student; (2) a more careful selection in the choice of instructors; (3) a modification of the best undergraduate methods to satisfy the needs of the older men.

DR. W. E. CASSELBERRY, of Chicago, read a paper on "Nasal Polypus; its Treatment by Resection of the Middle Turbinated Bone," giving an analysis of forty cases. Nasal polypus is to be regarded not so much as a disease in itself as symptomatic of other nasal affections. The most frequent of these are the various forms of ethmoiditis. Vigorous surgical treatment was advised, with the object of gaining access to the vicinity of the hiatus semilunaris, from which region polyps generally grow. He prefers the curet to the galvano-cautery for destroying the attachments of the growths. More recently he has advocated the resection of the antero-inferior part of the middle turbinated bone in order the more efficiently to bring about this result. He classifies the various conditions found associated with and underlying the polyp-formation as follows:

I. *Nasal polypus, with hypertrophic rhinitis.* Here there is no evidence of ethmoiditis, though it is suggested by the pressure of the polypus. Defective drainage and the accumulation of muco-pus in the middle meatus predispose to such polyp-formation. Removal of the polyps is followed by recovery without recurrence, the cautery being applied to the hypertrophied bodies of the turbinates. Six of the forty cases reported were of this class.

II. *Nasal polypus, with simple myxomatous ethmoiditis.* Here the turbinates have a glistening appearance and a pultaceous feel. Pressure results in the ethmoid region, with its various symptoms. The middle part of the bone should be resected and the myxomatous area thereby laid bare. Fourteen of the cases belonged to this group.

III. *Nasal polypus, with vasomotor ethmoiditis.* This is a variation of the preceding type. This group comprised nine cases. Four suffered from hay-fever, indicating the presence of a neurotic habit, and in all asthma was present. All were especially sensitive to excitants through the olfactory sense.

IV. *Nasal polypus with suppurative ethmoiditis.* Here there is a purulent discharge from the ethmoid cells, frequently coëxisting with empyema of some one of the accessory sinuses. The condition is a sequel of the preceding varieties, suppuration occurring only after the myxomatous tissue has accumulated sufficiently to obliterate the natural drainage. Six cases came under this heading.

V. *Nasal polypus with necrosing ethmoiditis.* Dr. Casselberry expressed his adherence to the views of Woakes to a certain extent, but regarded caries of the ethmoid as a usual accompaniment of polyps. Only five cases were found with unmistakable bone-necrosis. To such, and such only, should the term "necrosing ethmoiditis" be applied.

In all, the establishment of free drainage is a *sine qua non* of successful treatment. This often necessitates the removal of a portion of the middle turbinated. To effect this Dr. Casselberry has devised curved, serrated scissors, the use of which can be supplemented, if need be, by the snare or sharp forceps. Several sittings may be necessary to complete the operation; but if the middle turbinated presents no obstacle to normal drainage there is no occasion to remove it.

The discussion upon this paper was general, and the speakers all decried reckless and unnecessary surgical procedures in the nose, but there was a general unanimity that nothing short of radical measures would cure the chronic cases. Severe hemorrhage has resulted from the procedure recommended by Dr. Casselberry, and one (doubtful) case of cerebral abscess. Acute cases of ethmoidal trouble will frequently subside of themselves if local antiphlogistic measures alone are employed.

DR. JONATHAN WRIGHT, of Brooklyn, read a paper entitled "Papillary Hypertrophy of the Nasal Mucous Membrane Compared with a True Papilloma." He exhibited drawings showing the differences between these two conditions. True papilloma of the nose is very rare. The typical specimen described in the paper was removed from the uvula and the nasal specimen from the middle of the inferior turbinated bone. The papilloma consisted of a thick stem with irregular sprouts, some simply conical, springing directly from the central stem, but the larger number sub-divided into their own stem

and sprouts. The whole resembled a budding tuberous vegetable. The mass was without glands and had only small capillaries and a slight branching framework of connective tissue. This latter was covered everywhere with a large number of regularly striated layers of flat epithelial cells.

A drawing of the nasal growth showed a symmetrically rounded mass with cross-lines dividing it into more or less regular portions, resembling the "mulberry" hypertrophy which is so often found on the posterior portions of the inferior turbinated bones. In this particular instance, the mass was sessile but movable. Nearly an hour was occupied in its removal by the cold snare, but a sharp secondary hemorrhage resulted three hours later.

As contrasted with true papilloma, almost any fold of the nasal specimen was in connection with the central mass, without any appearance of the budding process. The line of surface epithelium was not especially thickened or irregular. The growth consisted, in fact, of all the constituent parts of the nasal mucous membrane of the inferior turbinated. The venous sinuses were markedly dilated. Glands were present, but only in small numbers. A great increase in fibrous connective tissue was noticeable. This was divided at the periphery into distinct processes covered by epithelium, and the intervening depressions gave the whole a nodular appearance.

Such growths are true papillary hypertrophies of the erectile sinuses of the bone-covering, and are due to the results of chronic inflammation. This latter causes a continuous and exaggerated contraction and dilatation of the sinuses in a stroma deprived of much of its muscular and elastic support.

"The Use of Metallic Electrodes in the Treatment of Nasal and Post-nasal Disease," was the title of a paper read by DR. CLARENCE C. RICE, of New York. His plan is to make use of the galvanic current, and to construct the positive electrode of some oxidizable substance, such as copper. This pole may be made in various shapes suited to the nose and naso-pharynx, and varying with the end aimed at. The negative electrode is the usual flat sponge, placed at some indifferent point, preferably the nape of the neck. When the current passes, the copper is dissolved and a new salt thereof, the oxychlorid, is formed and carried into the tissues. This is called "metallic," or "interstitial" electrolysis. Lime and iron can be used instead of copper, if desired. This plan of treatment has been elaborated by Gautier, Morton, Cleaves, and others, and is suggested by the well-known phenomena of cataphoresis.

It claimed that the salt is actually carried into the tissues, that hypersecretion action in this way is much more efficient than when it is merely applied in solution to the surface and that its influence is exerted upon the sub-mucous soil which is the seat of the pathologic process. The advantages are really three-fold, as we have the usual electrolysis of the tissues and the stimulating effect of the current.

The class of cases in which Dr. Rice had found the treatment of especial benefit included several of hypersecretion from the nasal mucosa, irritable cough from laryngeal and pharyngeal catarrh, and enlarged turbinated bones. In the latter instance the pole could advantageously take the shape of a copper needle. He had found the latter preferable to the galvano-cautery tip in checking bleeding from erosions of the nasal septum, and preferable to the caustic acids in reducing enlarged turbinated bones. He had not exceeded from 5 to 10 milliampères in the actual application of the current. Of twenty cases of the foregoing diseases treated six had been cured and three-fourths of the remainder distinctly benefited. Cocain was used if necessary.

(To be concluded.)

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

(Continued from page 615.)

THIRD DAY—MAY 31ST.

The first part of this session was under the care of the American Association of Genito urinary Surgeons.

DR. E. L. KEYES, of New York, read a paper on "Nephritis in Its Surgical Aspects." He confined himself to a consideration of that form of surgical nephritis in which suppuration occurs, either spontaneously in the course of suppurative disease of the urinary tract below (ascending pyelonephritis), or originating below as a result of infection by the surgeon, or in the blood (the descending variety)—all the various forms of so-called surgical kidney. It was first shown that without microbic infection suppuration in the kidney is impossible. The bacilli found most often are, notably, the bacterium coli commune, less often (alone or in company with the bacterium coli) the staphylococcus pyogenes aureus and the streptococcus pyogenes. These bacilli find entrance in a variety of alleged ways. The introduction alone of these bacilli does not occasion ascending pyelitis, or even necessarily cystitis. It is as much a question of soil as it is of seed. The soil is made receptive for microbic invasion by a variety of local physical maladies, by anything that interferes with free urinary outflow, by over-distention or tension, and also by traumatism and failure of the general vitality. The kidney is especially prepared for invasion by dilatation of the ureters, a condition always taking place from above downward, always due to a moderate obstruction of urinary outflow below—never to sudden stoppage of the urinary drainage, never due to back pressure of the urine.

The bacteriologic part was conducted by Prof. Dunham, of Bellevue Hospital Medical College, under Dr. Keyes' direction, to determine the destructive or inhibitive power over the three bacilli under consideration of a great variety of medical substances often used for local antiseptic purposes in the treatment of vesical suppuration and of a variety of urines medicated by the ingestion of a number of different drugs. About five thousand tubes were examined, the conclusions generalized and tabulated, with the result of showing theoretically which drugs possessed the greatest value under varying conditions, those of direct infection by the surgeon, the tissues not being involved, and those in which, chronic suppuration already existing, the bacilli were protected from the action of the antiseptic. These conditions were reproduced in the laboratory, a method of investigation apparently novel and yielding suggestive results. This investigation showed that silver nitrate is by far the most reliable

agent we possess in counteracting the effects of local contamination, while corrosive sublimate is more reliable when the tissues are involved. Salicylic acid was shown to be a very reliable antiseptic. Boric acid has little or no value, common salt being about as good.

The following general conclusions were presented: 1. Healthy urine is sterile. 2. Purulent urine is always microbic. 3. Microbic infection takes place from within the body by a number of methods in the course of disease; it is often brought about by instrumental manœuvers on the part of the surgeon. 4. A healthy organism and a vigorous bladder can cope successfully with microbic invasion and rid themselves, spontaneously or with a little aid, of all damage arising therefrom, showing little or even no inflammatory response. 5. A suitable condition of the patient's soil is essential to the propagation and perpetuation of the inflammatory phenomena upon the urinary tract after microbic invasion. 6. This condition, intensified by traumatism and physical weakness, notably of the degenerative variety, is most intense when there is vesical distention, with atony, and when the ureters are dilated and the kidneys involved in the changes incident to tension below, namely, atrophy, and sclerosis above, with or without superficial catarrh. 7. Under these circumstances surgical pyelonephritis is most likely to declare itself as a result of microbic infection from below (occasionally from above) in the course of suppurative disease. 8. Asepsis, antisepsis, and sterilization of urine are ends to be aimed at in genito-urinary surgery, but like all other "greatest goods," have not yet been attained in perfection. Much, however, can be done by local means in a prophylactic and curative way, little by internal medication, and possibly as much or more than by other means by flushing the urinary passages with natural mineral waters.

DR. GEORGE M. STERNBERG, Surgeon-General U. S. A., read a paper on "The Bacteriology of Pyelonephritis." He pointed out that ascending nephritis or pyelonephritis is very commonly secondary to cystitis of long standing. Recent researches show that the bacillus coli communis is found more frequently than any other microörganism in the so-called "surgical kidney." This bacillus is now known to be the usual cause of peritonitis. It has been obtained in pure culture in a number of cases of abscess of the liver, from urinary abscesses, and from the pleural cavity in certain cases of pleurisy.

Injections of a pure culture into the ureter after tying this below the point of injection have been shown to give rise to pyelo-nephritis, and the changes induced are said to correspond with those seen in the "surgical kidney" of man. Non-liquefying bacilli have been found in the urine of cases of chronic cystitis and of pyelonephritis, which appear to be identical with the bacillus coli communis, which has been shown to be very variable in its growth in various culture-media—upon gelatin the growth is sometimes transparent and sometimes opaque.

The bacillus coli communis has also been found in a considerable number of cases of cystitis.

In view of these facts the etiologic relation of this bacillus to ascending nephritis seems extremely probable. Certain cases appear to be due also to the presence of one or more species of proteus, and possibly to other microörganisms.

The second part of the session was under the care of the American Gynecological Society.

DR. WILLIAM GOODELL, of Philadelphia, said that he had taken the liberty of changing the title of his remarks from "The Conservative Surgery" to "The Conservative *Treatment* of the Female Pelvic Organs." This enlarged the scope of the subject and was more in keeping with his views; for he held that besides strictly surgical ones, there were other kinds of conservative treatment which are especially adapted to the ailing female organs. He considered the whole question of the proper treatment of those disorders to hinge on the effect of castration on women. These effects are prolonged and distressing vasomotor disturbances, and a tendency to morbid brooding, low spirits, melancholy, suicidal impulses, and even to insanity. Then again castrated women are liable to become unsexed to that extent as to lose all sexual feeling, or to have this greatly blunted. In some cases senile atrophy of the genitalia takes place, or a hypertrophic condition of the vulva occurs which forbids coition and causes much domestic unhappiness. An inevitable and deplorable result is sterility, which is often a cause of great sorrow. Stress was laid upon the prevalent lay opinion that women deprived of their ovaries are thereby wholly unsexed. Castration in the male and in the female is alike regarded as a sexual mutilation to which is attached a stigma. No woman would marry a eunuch and few men would wed a woman without ovaries. It is then manifest that during the period of woman's menstrual life her mental, physical, and social welfare depends largely upon the continuance of the catamenial and reproductive functions. Hence the conservation of those organs which preside over these functions is of the utmost importance.

Hasty operative interference, based on the plea that chronically diseased appendages are dangerous to life, is reprehensible, as few women perish from chronic disorder of these organs, even when pus is present. More women die from the radical operation than from the disease itself. To restore such women to health, abdominal section is by no means always necessary. Many have been cured by curetting and draining the womb. Others get well under the use of rest, massage, electricity, alteratives, and local applications, even when removal of their appendages has been recommended. In some instances this treatment is followed by conception and pregnancy.

The possibility of a closed-up Fallopian tube regaining its lumen is warmly disputed; but as uterine fibroids of large size spontaneously disappear through retrogressive metamorphosis, why may not the thin tubal septa of inflammatory origin also melt away with restoration of the bore of the tube? Examples were cited in which great disorganization of the tubes and ovaries did not prevent conception. Cases were also related in which a small fragment of an ovary or a short stump of a tube was left behind and pregnancy subsequently took place.

In view of these interesting facts, Dr. Goodell advised that when medicinal measures fail and the final appeal is made to the knife, as little as possible of the appendages should be taken away. If the tubes and ovaries are simply adherent and not otherwise damaged, they should merely be freed from these adhesions and not

extirpated. If they are diseased, only the unhealthy portions should be removed. He had found that a piece of ovary not larger than a small bean was quite ample to maintain intact menstruation and the sexual feelings.

He contended that the aim of modern surgery is conservation. Limbs, members, and organs are now saved which formerly would have been sacrificed. This is its glory, and this has been brought about by antisepsis. On the other hand, antisepsis by the glamor of success so dazzled modern gynecology as to make it a spoiler rather than a conservator. Reform here is greatly needed, the reform of conservative gynecology.

(To be concluded.)

CORRESPONDENCE.

PNEUMONIA FOLLOWED BY MANIA.

To the Editor of The Medical News,

Sir: In The Medical News of March 3, 1894, p. 236, Dr. J. B. Campbell reports three cases of pneumonia followed by mania. His report prompts me to relate the following case: On the night of December 21, 1893, I was telegraphed for from Arlington, thirty miles distant, to see Mrs. J. There being no roads to drive on and no train until morning, I reached the case at 8 A.M. on the 22d. The woman was a Norwegian about thirty-five years old, the mother of four children. She was sitting up in bed, her clothing literally torn from her body, clutching her hair and spitting spitefully—in short, a raving maniac. Her husband and a neighbor were trying to hold her and informed me that she had been in this condition all night. Without any ceremony I injected one-fourth grain of morphin. In about half an hour the woman quieted down and dropped asleep. Her pulse was 120, her temperature 102.5°. I elicited the following history from her husband: Ten or twelve days before, she was seized with a chill followed by pain in the chest, a severe cough, and expectoration of bloody sputa. The tongue was heavily coated with a dark fur, the cheeks were hectic, and the appetite lost. It was thought the woman had influenza. These symptoms finally abated and seemed to be getting well. She had been asleep on the afternoon of the 21st, and suddenly awoke, screaming "fire." The delirium continued until I injected the morphin. Physical examination showed the middle and lower lobes of the right lung to be in a state of hepatization. I prescribed ammonium carbonate, ʒij; infusion of digitalis, syrup. pruni virginianæ, āā ʒjss, a teaspoonful of the mixture to be taken every four hours. The woman made an uninterrupted recovery. I confess, had I known of the existence of pneumonia I should have been a little more conservative in the use of morphin, although in a similar case I should not hesitate to use it again.

Yours truly,

M. B. Mattice.

Sedro, Washington.

NEWS ITEMS.

A Summer Course in Neurology and Psychiatry will be given at the Illinois Eastern Hospital for the Insane, at Kankakee, Illinois, commencing June 4, 1894, and continuing six weeks. It will be conducted under the direction of Dr. Clarke Gapen, Superintendent, by Dr. Adolph Meyer, Pathologist to the Illinois Eastern Hospital, with the assistance of the Medical Staff.

It has been arranged to have a full course with daily lectures and practical work in the laboratory and wards, and an abridged course with two lectures a week.

Recent Appointments at Jefferson Medical College.—At a recent meeting of the Board of Trustees of Jefferson Medical College, Dr. W. Joseph Hearn was elected Clinical Professor of Surgery; Dr. Edward P. Davis, Clinical Professor of Obstetrics; and Dr. S. MacCuen Smith, Clinical Professor of Otology.

Books and Pamphlets Received.

The Measured Effects of Certain Therapeutic Agents, among which especially are Lavage, HCl, and Intra-gastric Electricity, upon the Secretory and Motor Functions of the Stomach in Cases of Chronic Catarrh (Glandular Gastritis). By D. D. Stewart, M.D. Reprinted from the Therapeutic Gazette, 1893.

Atlas of Head Sections. Fifty-three Engraved Copper Plates of Frozen Sections of the Head, and Fifty-three Key Plates with Descriptive Texts. By William MacEwen, M.D. New York: MacMillan & Co., 1893.

The Pathological Signification of Immunity. By A. L. Chapman, A.M., M.D. Reprinted from the Kansas City Medical Record, 1893.

Shipowners and Ships' Surgeons. Including Truth's Article, "Doctors at Sea." By Charles Henry Leet. Pamphlet. Liverpool: Seaforth, 1893.

Mechanical Aids in the Treatment of Chronic Forms of Disease. By George H. Taylor, M.D. Pamphlet. New York: George W. Rodgers, Publisher, 1893.

Two Cases of Hyaline Formations in the Optic Nerve. By John T. Carpenter, Jr., M.D. Reprinted from the International Medical Magazine, 1893.

The Students' Quiz Series. Surgery: A Manual for Students and Practitioners. By Bern B Gallaudet, M.D, and Charles N. Dixon-Jones, B.S., M.D. Philadelphia: Lea Brothers & Co., 1893.

Is the Philosophical Practice of Medicine not Jeopardized by the Modern Methods of Venders of Drugs? By Henry L. Coit, M.D. Pamphlet, 1893.

Recent Progress in Electro-gynecology. By G. Betton Massey, M.D. Reprinted from the Journal of the American Medical Association, 1893.

Prevalent Errors in the Treatment of the Diseases of Women. By G. Betton Massey, M.D. Reprinted from the Therapeutic Gazette, 1893.

Changes in the Urine Subsequent to Nephrectomy; Two Cases. By P. Max Foshay, M.S., M.D. Reprinted from the International Medical Magazine, 1893.

A Text-book of Physiology. By M. Foster, M.D., LL.D., F.R.S. Sixth edition. Part I, Comprising Book I. New York and London: MacMillan & Co., 1893.

Traumatisms and Traumatic Aneurisms of the Vertebral Artery and their Surgical Treatment, with the Report of a Cured Case. By Rudolph Matas, M.D. Reprinted from the Annals of Surgery, 1893.

Manual of Physical Diagnosis for the Use of Students and Physicians. By James Tyson, M.D. Philadelphia: P. Blakiston, Son & Co., 1893.

Funny Bone. A Book of Mirth for Doctors, Druggists, Dentists, Medical Students, and Others. St. Louis: The Funny Bone Publishing Co., 1893.

Annual Report of the Central Lunatic Asylum of the State of Virginia (Petersburg, Va.), for the Fiscal Year ending September 30, 1893. Richmond: J. H. O'Bannon, Superintendent of Public Printing, 1893.

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ORIGINAL ADDRESSES.

PRESIDENT'S ADDRESS.[1]

BY JAMES F. HIBBERD, M.D., LL.D.,
OF RICHMOND, IND.

AT every annual meeting the officers of the Association, particularly the permanent Secretary and the Treasurer, have difficulty in appeasing delegates who are not received because the credentials presented by them have not been issued by a society entitled to representation in the Association. The law regulating this matter is plain, to wit: "The delegates shall receive their appointment from permanently organized State Medical Societies, and such county and district Medical Societies as are recognized *by representation* in their respective State Societies."

The difficulty lies in the fact that some of the State Societies are not representative bodies, and consequently this constitutional provision cuts off all delegates from such States except those commissioned by the State Society itself. While this is the letter of the law it is not the spirit that animates the organization of the Association. The constitution should be revised in this particular at least. There are two ways of overcoming the trouble; 1. Strike out the words "representation in" from the constitution where it prescribes the qualifications of delegates, leaving all such county and district Medical Societies as are recognized by their respective State Societies fully authorized to commission delegates to this Association. The other and better plan would be for every county society in each State to be represented in its State Society. Facile methods of accomplishing this can readily be selected. Perhaps the plan of organization so long in successful and satisfactory operation in Indiana might serve as a paradigm. There each county has its society, known by the name of the county, and the State Society is composed of all the members of all the county societies. Annually each county society selects delegates to the State Society, and at the same time nominates delegates to the American Medical Association who are commissioned by the State Society. This simple plan secures substantial autonomy to the county societies and provides for equal representation to the Association from every part of the State. Every member of every county society can attend the meetings of the State Society and participate in all business except voting. This seems to me both theoretically and practically adapted to a complete organization of the profession in every part of the Union, and if this Association, at this session, would formulate a scheme similar in spirit and in terms recommend it to the consideration of such State Societies as do not now have an equally serviciable organization, it would, in my judgment, be doing a good work, sowing seed that would bring forth sound fruit in the future. In Indiana the State Society and each county society are legal corporations, and while this is not essential to its method of organization of the profession of the State it is to my mind desirable.

In this connection I desire to lay before you some thoughts touching the arrangement of subordinate medical societies in their relation to the American Medical Association. Every medical man who belongs to any medical society should belong to a county or an equivalent medical society, and every member of a county society should be, *ipso facto*, a member of his State Society, and this an *open sesame* to the American Medical Association. By this arrangement all reputable physicians in the United States would be brought together in a common guild whose power to do good within its legitimate sphere would be limited only by its aggregate wit and energy. Such a consummation would place this Association in a position to fulfil the mission hopefully anticipated for it by its earnest and patriotic founders, and would elevate the American profession to a plane for useful work, the highest conceivable for the disciples of scientific medicine.

This would in no wise interfere with the organization of medical men devoted to special lines of practice or investigation; indeed, the more of these, and the more special their fields of labor and inquiry, the more rapid will be the development of medical knowledge, the nearer will expert art approach to perfection, and the greater will be the blessing to humankind. In these special and limited societies there will be a concentration of thought and labor that will yield results advanced and true to a degree beyond hope from a more promiscuous assembly.

All the adherents of the special organizations will be members of county societies, and thereby of their respective State societies, whence, for the asking, they can step through the portals of this Association, and find in our sections a department already organized and at work, into which they can enter, each according to his tastes or qualifications, and feel at home among fellow-laborers.

A member of either of these special organizations entering the appropriate section will find himself in the midst of all the members of the Association whose tastes run parallel with his own, whether specialist or general practitioner; and it is this mingling of these sundry classes of investigators and practitioners, exchanging views and detailing experience, that creates the vast stores of profit and pleasure so much enjoyed at our annual meetings. In this scheme for the organization of the American Medical profession is there not promise enough to make us hope and labor for its early consummation?

[1] Delivered before the American Medical Association at the forty-fifth annual meeting held at San Francisco, June 5, 1894.—Abridged.

A sentiment was expressed last year at Milwaukee by a member, and has, I think, some currency among other members, that indicated a misconception of the character and *personnel* of the sections as I view them. The sentiment was uttered in a private discussion of the propriety of conferring on the Business Committee the functions of the Nominating Committee, and was substantially this: My colloquist said: "The Business Committee is made up of ex-chairmen of sections; the sections are in the hands of the specialists; the specialists reside in the greater cities, and consequently the Business Committee will be constituted of special practitioners who hail from the greater cities, and some of the cities are great enough to furnish half a dozen chairmen at once. This will not only exclude general practitioners from a voice in the selection of officers of the Association, but may by chance or design place the general business of the Association under the management of specialists from a few of the more important cities of the country." The error of this misrepresentation lies in the fact that its entertainers fail to recognize that the aggregate membership of the sections of each annual session is the total membership of the Association in attendance.

True, in each section there will be members of the special society whose work is the same as that to which the section is devoted, and there will be others whose engagements are limited to the same line of practice; but these combined, except in two or three sections, will not number more than a small minority, probably not a tenth of those enrolled in the section; the other nine-tenths will be general practitioners whose professional proclivities have directed them to the section; and these general practitioners have the power by their votes, the right by virtue of their membership, and the obligation under their duty to the Association, to elect the best man in the section to its chairmanship, without inquiry whether he lives in a big city, a little city, or a hamlet, and in so doing will make it patent to every thoughtful mind that the *personnel* of the Business Committee will be selected under conditions to insure as intelligent, as well distributed, and as trustworthy a committee as the Association can secure. And, moreover, the function of a nominating committee is to nominate—not elect; confirmation or substitution is in the authority of, and always exercised by, the Association. I am led to present this subject in this light and to this extent because I feel that a majority of the members recognize the imperfections of our present mode of selecting the Nominating Committee, and realize that the welfare of the Association calls for a committee to exercise the important functions of the Nominating Committee, which has elements of permanence in its organization, and whose *personnel* has been selected with something of deliberation.

When Dr. George M. Sternberg was appointed Surgeon-General of the Army, in May of last year, he made two innovations in the administration of the affairs of the office: First, in establishing an Army Medical School, to give passed candidates for appointment to the Army laboratory practice in bacteriology, sanitary chemistry, and other essential instructions for military service; second, in filling the position of attending surgeon in cities having good facilities for medical improvement with young men who were preparing for promotion.

These changes did an excellent work that was accomplished without additional expense to the Government; the Museum and Library Building furnished the rooms, and the medical officers on duty in Washington did the teaching in addition to their regular work. But the number of active young surgeons about Washington and other cities attracted observation, and led the chairman of the Committee on Military Affairs to conclude there was a surplus of assistant surgeons, and in his report to the House he reduced the number from 125 to 90, thus inhibiting fresh appointments until the number shall be so reduced. This recommendation has passed the House, and if it should be approved by the Senate will greatly embarrass the medical service of the Army, and in the end be a detriment to the country, because many military posts will have to depend on civil physicians for medical attendance, and in case of war these would not take the field, and the Army would be without trained medical officers, which would be as serious an evil as unskilled officers in any other department. When these facts were pointed out to the chairman of the committee by other members with better knowledge of practical military affairs, the chairman replied that no one outside the Army surgeons had complained—not a single medical society had claimed that injury would be the result.

Let the American Medical Association at once call the attention of Congress to the mistake threatened.

Many of you may remember that the last Congress of the United States was about to refuse an appropriation to continue and complete the publication of the *Index-Catalogue* of the Library of the Surgeon-General's Office, the venerable chairman of the House Appropriation Committee alleging that the medical fraternity was demanding too much, in fact had already received more than the lawyers or any other professional guild. This state of affairs becoming a matter of common fame, some physicians interested their Representatives in the House by presenting to them the true state of affairs, with the result of a concerted effort being made in the House to enlighten the assembly to the extent of convincing the members that this was not an appropriation for the benefit of medical men, but to complete a great educational work for the benefit of the whole people, the doctors' relation to it being that they must do the work, because no other class of men were trained to the service. The appropriation was saved and the *Catalogue* is nearing completion.

But there is still a point in connection with the appropriation for the Library that needs attention, that can probably be better given by this Association than otherwise, and that is the restoration of a part of the appropriation for support of the Library which was dropped by the last Congress and the cut continued in the Military Bill before the present House. For twelve years the appropriation was $10,000, but the last Congress reduced it to $7000, and the present Congress proposes to continue the reduction. Doubtless most Congressmen, and possibly some physicians, regard the Library of the Surgeon-General's Office as an ordinary department library, intended mainly for the use of the medical officers of the Army; but in truth it is the National Medical Library, open to and used by physicians from all parts of the country, and the possibility of finding at one place in this coun-

try the greater part of the literature on any medical subject has exercised a powerful influence on American medical literature and education.

The Library aims to obtain every medical book, periodical, and report published in any country or language as soon as possible after its issue, and have it at once catalogued and indexed and made available for use. This requires about $7500 annually. There are still between twenty and thirty thousand volumes of medical books published years ago required to complete its equipment to meet all calls made upon it. These volumes are out of print and only to be obtained from secondhand booksellers and auction sales as opportunity offers, and will involve say $2500 spent annually for perhaps ten years. Does not this condition of the Library and its support make a demand on this Association for aid, either as an organization or through the influence of its individual members on their respective members of Congress?

The desirability of supervision of public health by the General Government has been recognized by this Association for many years and manifested in various ways. Four years ago a committee, with Dr. C. G. Comegys chairman, was appointed to prepare a bill and petition Congress on behalf of the Association to establish a Department of Public Health, with a Secretary for its chief, who should be a member of the President's Cabinet. This committee has done much earnest work, drafted a bill and presented it to Congress, devoted labor and time personally to its advocacy before committees and members of Congress. The committee has been continued, somewhat modified, and has reported annually to the Association, and will present an interesting report to this meeting, to which I invite your thoughtful attention. Last year the Association appointed another committee, with Dr. U. O. B. Wingate as chairman, to consult with a like committee of the American Public Health Association, which has for several years been engaged in an effort to induce Congress to enact a law placing the supervision of the public health in charge of the General Government. This committee will also submit a report for your consideration.

Other organizations have likewise entered Congress with petitions asking that the General Government be clothed with authority to execute measures to assist in protecting public health. Much good may be anticipated from the attention these several sanitary organizations will excite both in the Congressional and public mind, and I doubt not that when the agitation has accomplished the valuable result of cultivating a knowledge of what is essential to the public welfare it will lead to a union of effort on the part of all workers that will insure satisfactory results.

My interest in the premises is such that, during the year I have sought, through personal intercourse and a wide range of correspondence, to ferret out the best plan for supervision of public health that we can hope to have Congress crystallize into a working law. Without rehearsing details, I feel free to declare my conviction that enough has been ascertained of the sentiment of the executive and legislative departments of the Government to rob us of all hope of the establishment of a Department of Public Health within the remainder of the nineteenth century.

A bureau of public health, with a commissioner as its chief, within one of the existing departments of the government, was apparently within reach of a united, harmonious, aggressive effort of the profession for a year or two previous to the enlargement of the power of the Marine Hospital service by the last preceding Congress, but the excellent work of that service at home and abroad since its increase of authority and means has lessened the anxiety of the Government and the apprehension of the public in such degree as to make those in power less attentive to appeals to do what should yet be accomplished.

The outlook at this time for securing a Bureau of Public Health during this session of Congress is not encouraging, but if the problems in silver, and tariff, and national revenue should be speedily and satisfactorily solved there might appear a ray of hope for a bureau within the life of the present Congress, provided the medical and sanitary professions would make common and joint effort in demanding it.

At present there is no measure formulated in this behalf so worthy of support as the New York Academy of Medicine bill now in the hands of Congress, and in making this declaration I by no means ignore the fact that strong opposition to that bill has been made by strong men, but I well know that no important measure like that can be inaugurated without challenging adverse criticism, but my abiding faith in the fitness of sanitary human nature for great things is such that I harbor no doubt that if the opponents of this bill present a better one than it, its friends will accept it, and if this bill sustains its present status under severest scrutiny its opponents will join in urging its enactment into a law, and thereby vindicate characters at once wise and patriotic.

While a century of experience has convinced the great body of intelligent people that vaccination is the true and only prophylatic for smallpox, it has not carried conviction to the extent its merits deserve and the welfare of the people demands. The causes of this are not difficult to discern; vaccination and other forms of sanitation have prevented a visitation of the epidemic of smallpox in this country for a generation, and people have lost the fear of its contagion through ignorance of its nature while progressing, and its sequelæ if its victim survives. Add to this the disorders that sometimes follow the insertion of pure vaccine in a cachectic system, and the greater evils arising from the use of spurious or imperfect vaccine and careless vaccination, all open to the observation of the public and subject to amplification by cranks and the maliciously ignorant, and we cannot marvel that there is a positive distaste for vaccination among a considerable portion of our population, and a carelessness about securing it on the part of a much larger number. A knowledge of these facts should only inspire physicians and other sanitarians who are the custodians of the knowledge of the value of vaccination to redoubled activity in devising and executing popular methods of instruction as to the entire reliability of vaccination to protect from smallpox, as much so as smallpox itself, and that with pure vaccine inserted under proper conditions into the tissues of a person fit to receive it there is positively no shadow of evil, but a promise of good not surpassed by any other single measure of preventive medicine.

Evidence accumulates that the undetermined conditions that conduce to the propagation of smallpox are now, and for at least two years have been, prevalent in this country, resulting in outbreaks of the disease more or less serious in various parts of the country, and too often leaving foci from which fresh infection is distributed. Under these circumstances it seems to me the reasonable duty of this Association at this time to declare and proclaim its unabated faith in the virtue of vaccination to protect from smallpox, to render persons as immune against variola as an attack of variola itself, and that it is innocent of all mischief when the vaccination is done by a vaccinator who is a competent judge of both the purity of the vaccine and the fitness of the vaccinee.

Let us abide in the hope that the Jenner centennial celebration provided by this Association, and to be a part of its exercises at the annual meeting in 1896, may bring out the boundless blessing of the discovery of the immortal Jenner in such wise that all men shall see and acknowledge its protecting power, and even the wayfaring man, though a fool, may not err by further causeless cavil.

Two leading purposes the fathers of this Association had in view at its organization, demanding its serious consideration, were the elevation of the standard of medical education and that the authority to decide upon the sufficiency of the qualifications of a candidate for a diploma should not rest with his teachers.

Much has been done in advancing the extent and character of the collegiate instruction of medical students; the examination of candidates for diplomas is still conducted by teachers who instructed them, as was done then, and is no more satisfactory to the thoughtful minority of the profession now than it was then. Forty-eight years ago seven professors formed the conventional number of the faculty for medical colleges, and the annual term was twenty weeks, and in the two terms required for graduation the students heard the same lectures each year. Now there are medical colleges requiring attendance four years of seven months each, on graded courses under, in some instances, as many as forty-eight instructors. This for the equipment for graduation, while one post-graduate school announces one hundred and sixty-four instructors. Certainly the Association has ground to congratulate itself on the fruits of its persevering labors to secure more thorough medical education; but this has been the theme of so much of the literature of the Association that I drop the general subject and confine my remarks to one suggestion as to a particular line of instruction.

The progress of medicine in the immediate future must be along biologic lines, and to me it seems desirable that every medical college should have a chair devoted specially to instruction in biology. Within the current year, responding to an invitation to make some remarks on matters pertinent to a lecture on bacteria which had just been delivered, a genteman of superior culture, of extensive travel, and acute observation, a lawyer by profession and a statesman by practice, said that the status of physicians had within comparatively few years undergone a marked change. In earlier historic times the priests were accounted of highest rank and worth in the civil professions; then came a period when the devotees of statecraft received highest honor, and exercised most potent influence in the affairs of men; physicians held subordinate rank and position both in war and in peace; but in the last few decades the relations of these professions among themselves, and in their standing before the world, have undergone significant change, until, from being the lowest, physicians are now rising above the other liberal professions, and will steadily move forward until they are accorded the first place among honored people of the world, and this for the reason that they have devoted themselves by rigid scientific investigations to make patent the causes of disease, and to determining exact measures for emasculating these causes, and for neutralizing their effects when they have eluded detection or escaped emasculation. My own sentiments accord entirely with the spirit of the views enunciated by the learned gentlemen, and my estimate is based on the result of the more exact methods applied to the investigations of the laws by which the omnipotent Creator has fashioned the world and continues its government. The microscope in skilled hands, and its revelations compared and classified with scientific acumen, have revolutionized our knowedge of the world of living things below the world of macroscopic living things, and in this minor, and, to us, newly revealed world, have been discovered the generators of the most extensive, persistent, and malignant epidemics that periodically decimate the earth, as well as many of the most frequent, and intractable, and fatal disorders that we have always with us. All this knowledge has been wrought out by the devotees of one branch of biology, and another line of biologic workers have carried us back through the morphology of organs, tissues, and cells to the origin of vital activity in protoplasm, and, still more important in doing so, have given us glimpses of the origin and development of the somatic mind that will, when the scheme of nervous organization and function shall be clearly portrayed, dissolve the mystery that has in the past obscured our realization of the true nature of hypnotism, Christian science, and other anomalous neuroses which the sciolists, and in an especial manner those claiming to be doctors, are promulgating and practising, to the discredit of true scientists and the injury of the ignorant and weak-minded classes.

We should apotheosize protoplasm, the dividing line between inorganic and organized matter, itself at once the result of the law of perpetual motion with which the Creator endowed the atoms of elemental matter, and the beginning of that phase of energy known as vital activity, which, in its development, as now presented to us, constitutes the entire vegetable and animal kingdom.

No one people or class of people can claim exclusively to have opened the way into this more primitive arcana of Nature. The physicists of all nations, botanists, zoölogists, anatomists, physiologists and their congeners have all participated in this progress. Schwann and Virchow and Ferrier and Jackson and Pasteur and Koch and Sternberg may be mentoned, without prejudice to the labor, name or fame of their many coadjutors, as examples of what benefactors to our race scientists may become whose genius lifts them to a plane of investigation not covered by the curricula enforced in the medical schools of their day, and their distinction is due to their advanced study of biology.

This review impresses me with the importance of es-

tablishing in each of our medical colleges where a finished education is intended, a chair especially devoted to teaching the principles and practice of biology on the lines and to the extent herein indicated, from whose alumni we shall have more quickly arise neophyte Virchows, Pasteurs, Jacksons, and Sternbergs, whose labor, when further advanced, shall hasten the day when the world shall recognize the medical profession as the paramount benefactors of the human race, by virtue of suppressing the causes of all preventable disease and alleviating the suffering, shortening the duration, and lessening the ravages of such as cannot be prevented. And with this higher estate of the disciples of Æsculapius will come such insignia of real knowledge, such fruit of expert skill, that he who runs may read the lines that broadly separate the true physician from ignorant or unscrupulous pretenders.

Amendments to the constitution are always pending, sometimes many, sometimes few; those submitted the preceding year are disposed of at each annual session, but others take their place for consideration at the succeeding meeting. Few of these are approved by the Association, being lost through failure to receive the support of three-fourths of the delegates present, or by not being called up by their authors or others.

Last year a special committee, appointed at the last preceding meeting, made a report remodeling the entire constitution, which necessarily laid over until this meeting, and the committee, being continued, will make further report here, and the whole subject will come up for final disposition at this meeting. It is apparent to all who have given attention to the matter that there is much feeling among the members who have been active in working up the changes that will be offered as a substitute for the constitution as it now exists, and also among those who regard the innovation an evil instead of a benefit. But while these feelings are right and proper in themselves, they need not claim other than watchful attention to secure a fair and unbiased expression of the will of the Association according to the method prescribed by our laws, and in so doing there is nothing to excite passion or interfere with that calm deliberation that distinguishes the proceedings of an assembly composed of cultured and refined people seeking the welfare of the guild to which they belong. This may readily be done by taking a vote to determine whether the voters present desire any change in the existing constitution. If this decision is against any change the question is concluded for the nonce. If the decision expresses dissatisfaction with the constitution as it is, the next question should be: Is the report of the Committee of Revision precisely what the voters want as a substitute? An affirmative vote here settles the matter, and a negative vote will call for amendments that will adjust either the existing constitution or the committee's substitute until it conforms to the wish of the delegates. Is it not palpable to every considerate mind that all this may be done without excitement of any kind, and with a minimum waste of the time of the Association?

And so too with our Code of Ethics. For many years there has been a feeling among many most excellent and intelligent working members of our guild that the Code did not fairly accord with the demands of the advanced profession in their intercourse with each other, nor with the proper reciprocal relations between the profession and the public; while, on the other hand, many members equally intelligent and devoted to the Association have felt that the Code of Ethics that has guided the Association through nearly half a century prosperously and honorably, and is still a reliable guide in every advanced thought and action, cannot be bettered for our present status, and should not be disturbed. At Detroit, in 1892, this agitation culminated in the appointment of a committee to inquire into the expediency of revising the Code. This committee last year submitted two reports, the majority recommending an amended Code, and indicating the lines on which emendation should proceed. The committee was continued to complete its labors, and the fruit of its service will be before you in an extended report. The minority report claimed the sufficiency of the Code as it is, and recommended that it be left intact. Here also, even more than with remodeling the constitution, there is much warmth of feeling, and as in that case a little calm forethought will convince that a primary vote, involving the question whether or not the voters want any alteration of the Code, may end the consideration of the subject without excitement, confusion, or overwarmth of feeling by a decision to let the Code stand as it is, and a contrary decision will call for such further procedure as recited for the completion of an amended constitution, and in this, as in that, the work should be done as intelligent and fair-minded citizens transact important business, with decorum and without waste of time.

Touching the sufficiency of the Constitution and Code of Ethics of the American Medical Association as they are now, I have well settled convictions, the result of many years' observation, experience, and reflection, but I am not here to proselyte to my opinions. As I interpret my mission on this occasion, it is to exercise my influence and use my authority to secure to those here entitled to vote a clear expression of untrammeled judgment, and to encourage a cheerful acquiescence of all parties in whatever conclusion may be thus reached.

Shall I not have the co-operation of every friend of the American Medical Association present in this laudable effort?

ADDRESS OF THE CHAIRMAN OF THE SECTION OF OBSTETRICS AND DISEASES OF WOMEN, AMERICAN MEDICAL ASSOCIATION.[1]

BY JOSEPH EASTMAN, M.D., LL.D.,
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MR. CHAIRMAN, LADIES AND GENTLEMEN: It seems best on this occasion to turn aside from the usual custom of reporting progress in the department of Obstetrics and Gynecology, a subject which has been so often and so ably presented by my predecessors, and call your attention to the present status of suprapubic hysterectomy, as viewed from the standpoint of personal observation and clinical research, with the hope that I may contribute in some small measure to the profitable discussions which I am quite sure will follow the reading of the valuable papers on your program.

[1] Delivered at San Francisco, June 5, 1894.

It is not my intention to report a series of operations peformed for the removal of symmetrically formed pear-shaped tumors with well-defined broad ligaments, with uterine arteries easily accessible and pulsating in their anxiety to be ligated—tumor, ligaments, and arteries dealt with by some definite method, each operation performed in exactly so many minutes, and all the patients making uneventful recoveries. The literature of the subject is already cursed with such productions. Therefore, I would rather suggest such means and methods as experience has taught me will furnish the best possible results in dealing with tumors by no means symmetrically formed; with broad ligaments displaced and disorganized by nodular masses interfering with the ligation of arteries and the easy formation of pedicles.

Despite the efforts of some to name a distinct method of operating, because a flap is made here, or a ligature placed there, the problems of suprapubic hysterectomy are rapidly nearing their solution. Those engaged in the work are divided into two classes: First, those who have been and are yet satisfied with forming a pedicle and fixing it in the abdominal wound; second, those not satisfied that this method is the best that could be devised, and who have earnestly endeavored to reach some method that shall disregard the morphology of tumor, of broad ligaments, and the location of uterine arteries.

On February 3, 1887, knowing full well that abdominal fixation of the pedicle in suprapubic hysterectomy had at that time given the lowest rate of mortality, I decided not to operate in that way, but planned and executed an operation which in every essential feature was an extirpation of almost the entire cervix. A large cautery passed three times down through the cervix in reality destroyed a large portion of what little cervix was left. A rubber drainage-tube was inserted for vaginal drainage.

In a recent discussion in the *New York Journal of Obstetrics and Gynecology*, the operations by Stimson, Krug, Baer, and myself are spoken of as if they were all operations of total ablation of the uterus. If these operations are to be considered, then the operation of Stimson in November, 1888, was antedated by my determination to secure something better than the abdominal fixation of the pedicle, on February 3, 1887.

It is not my purpose to occupy time in discussing questions of priority, although the operation, including the use of my hysterectomy-staff, as I demonstrated it at the International Congress in Berlin, has since been performed many times by Chrobak, of Vienna, and by numerous American operators, with great satisfaction, and while I received many congratulatory letters from distinguished operators, on account of the rapidity and definiteness of the operation made possible by the use of the staff, I have been working to still further simplify and perfect the operation.

I concede the fact that when a given fibroid tumor has no nodular masses in the region in which we would form a pedicle or imbedded in the broad ligaments, and when the abdomen is not exceedingly fat, abdominal fixation has given results, in the hands of expert operators, in a very high degree satisfactory. So far as I have been enabled to read the writings of its warmest advocates, none of them has mentioned the very strongest point in its favor: namely, that in this method we have practically *one wound*, whereas in total or partial extirpation-methods we have two wounds, the one in the abdomen, the other in the pelvis, the latter extending, through connective tissue rich in lymphatics, down to the vagina, an incubator for many varieties of bacteria, and which cannot always be sterilized and maintained aseptic during an operation. Notwithstanding the strong points in favor of abdominal fixation of a pedicle, which I have mentioned, it has been the subject near my heart for nearly eight years to study out the anatomy and its displacements by pathologic neoplasms, and perfect a method as speedy of execution, followed by as successful results, as any or all other methods—a method applicable not only to tumors when a pedicle for abdominal fixation could be easily formed, but also to those cases in which nodular masses have completely disorganized the cervix, and intra-ligamentous masses are found in the broad ligaments of one or both sides.

I became well convinced a number of years ago that the use of the clamp of Keith or the serre-nœud of Koeberlé for controlling hemorrhage from the neck of the uterus was based upon the idea that the spiral or curling branches given off from the uterine arteries really penetrated the tissues of the uterus, including its cervix. Some seven text-books on anatomy, which I have examined, state that these branches penetrate the uterus. I have a number of times, with fingers on the broad ligaments and their contained vessels, cut directly through, seizing the spurting vessel, and securing it later. I have also peeled off the uterine arteries from the sides of the uterus and then cut off the cervix with little or no hemorrhage.

These studies were made for the purpose of reducing the number of ligatures,[1] long or short, to become encapsulated or slough off through the vagina, and also to economize the time required for their thorough application.

Here is a nodular mass, fed and nourished by a capsule—a capsule containing the venous and arterial capillaries. It is well known to every gynecic surgeon that these nodules can be peeled out of the capsule without ligating a single artery. What I have stated regarding the nourishment of this nodule by its network of capillaries, and not by the penetration of the arteries (for surgical purposes), holds true with reference to a uterus disorganized by a fibroid tumor or tumors, *no matter how large or how small;* not only the fibroid uterus, but the normal uterus as well; not only the uterus, but its *entire cervix down to the external os.*

I here present a specimen (a photograph of which can be seen in the *American Journal of Obstetrics and Diseases of Women* for the current month), and to my mind it marks a *new era in the removal of fibroid tumors by hysterectomy*, for the reason that the uterine arteries were not ligated at all. I went down between the uterine arteries and the uterus. The uterine arteries were absolutely left in the pelvis of the woman, not a single ligature being used except those which tied off

[1] A ligature to secure the uterine arteries will often secure a certain amount of muscular and connective tissue, and is one of the possible sources of infection of the wound; hence the importance of having as few ligatures constricting tissue in this work as possible.

the ovarian arteries and a small portion of the upper border of the broad ligaments.[1]

Then, in addition to solving the problem as to what to do with the pedicle, by deciding not to have any, we now solve the problem as to what to do with the broad ligaments and especially their contained uterine arteries, by simply leaving them in the pelvis of the patient.

In this case I simply controlled the circulation in the ovarian artery by ligating the upper portion of the broad ligaments with a strong ligature; then cutting the broad ligaments above the ligature, began with the serrated gouge to peel down the broad ligaments, keeping the gouge close to the tumor, being especially careful in the interspaces between the nodules not to puncture or tear the uterine artery or any of its branches. From time to time, nicking the edges of the peritoneum with button-pointed scissors, with the serrated cutting edge I pushed it forward under the peritoneum, anteriorly and posteriorly, so as to make anterior and posterior flaps. Then, pushing with the serrated gouge, I carefully worked around the tumor until I had reached the uterine cervix, and then proceeded with still greater caution not to cut the cervix or its capsule, but to push it down as I now slip my cuff toward my elbow with the fingers of my right hand. The enucleation of the lower portion of the uterus, including its cervix, reminds me of Professor Sayre's admonition when removing the head of the femur for hip-joint disease. He says, "I take this oyster-knife and work my way past the trochanters, major and minor, then make sure to get beneath the periosteum close to the bone." Then he used to say, "d——n the anatomy, stick close to the bone," and proceeded to peel off the periosteum until he had the entire head of the femur out of the acetabulum.

As I reached this lower part of the cervix my hysterectomy-staff was passed up the vagina by my son, Dr. Thomas B. Eastman. I then removed the entire cervix, cutting a little opening upon the staff, slipping a strip of gauze in the fenestra of the staff. When the staff was withdrawn this was brought down in the vagina, the upper portion of the gauze being packed into the pocket from which the cervix had been enucleated. The flaps which I had dissected off from the tumor and the cervix were brought together by buried suture over the ligatures, which had included the ovarian arteries, so that their raw ends also came into the wound. Several rows of buried suture were used, so that all raw edges made by peeling out the cervix were deeply buried so as to prevent leaking into the peritoneal cavity, the gauze being dragged down into the vagina a little each day, and facilitating perfect drainage in that direction. This operation is the *realization of the ideal.* Heretofore all of us had simply been *idealizing the real.* In a lecture delivered to the Post-Graduate School of Chicago, in July 1893, I closed with a series of conclusions. From them I quote the third, to wit: "When the neck of the uterus remains small, the abdomen not too fat, after the ovaries and tubes have been tied off the pedicle may be fastened in the lower angle of wound and give satisfactory results." To this conclusion, stated at this time, I have this to add: When such anatomic conditions exist, enucleation of the cervix can be done in less time than the manufacturing of the pedicle, the adjustment of the serre-nœud and elastic ligature. Furthermore, abdominal fixation of the pedicle cannot be accomplished in all cases.

In conversation with several distinguished abdominal surgeons, including Dr. Bantock, of London, I find that these gentlemen quite frequently meet with cases in which no pedicle can be formed to fix in the abdominal wound. It is to this class of cases I would invite the best directed efforts on the part of those who have a heartfelt interest in this class of suffering women.

One's percentage of recoveries would undoubtedly be much better if, after making a careful examination which discloses a tumor deeply imbedded in the pelvis, we would discourage operative procedure; but in my first one hundred hysterectomies I found a number of cases presenting gangrenous tumors and tumors containing gangrenous nodules, causing slow death in some cases and rapid death in others, from septicemia. Within the last six months I have operated on seven women who had either gangrenous fibroid tumors or fibroid tumors with gangrenous nodules. In five of the cases the nodular masses were deeply imbedded in the pelvis, and two of the cases were operated on within one week. In each case a nodule as large as a cocoanut was completely imbedded in the broad ligaments, having been developed from low down on the side of the uterus, and in both cases the nodular masses were in an advanced state of gangrene, in consequence of which there was an elevation of temperature ranging from 100° to 103°. In two other cases the subserous tumors had become gangrenous from small twisted pedicles.

In each case rapid and well-pronounced septicemia threatened the life of the patient. Surely the technique of suprapubic hysterectomy is not complete until it is guided by sound surgical principles. We have methods and means for this class of cases.

In this class of cases I have been pleased with the rapidity with which we can ligate the upper portion of the broad ligaments, cut the same loose from the tumor, peeling the peritoneal covering off from the tissue, leaving a little subserous tissue beneath it; enucleating nodular masses and directly find ourselves down on the uterine cervix close to the external os with only an occasional bleeding from some enlarged arterial twig.

The most serious question in my mind in these cases is how to properly drain the cavities from which the nodular masses have been enucleated. In a recent case I packed the cavity in the broad ligament, from which I had enucleated a gangrenous mass as large as a cocoanut, with iodoform-gauze, bringing the same out at the side of the pedicle, which I had fixed in the abdominal wound. In addition to the gauze I placed a metallic drainage-tube well down into the pocket. I wished to be absolutely certain that this cavity was thoroughly drained, believing that in other cases in which I had trusted to gauze alone for drainage it was not satisfactory. In the first forty-eight hours we pumped out of this drainage-tube fully a pint of black blood, which,

[1] Sauter, three-quarters of a century ago, removed the uterus per vaginam without clamp or ligature. (See article by Dr. Guido Bell, Indiana Med. Journal, February, 1894.) Further, the enucleation of the cervix per vaginam was made by Langenbeck in 1813; by Recamier in 1829, and by Malgaigne at a later date. (See letters by Dr. Robert Reyburn, THE MEDICAL NEWS, February 10, 1894, p. 146, February 24, 1894, p. 223, and May 12, 1894, p. 529.)

coming from the cavity occupied by this gangrenous nodule, emitted considerable odor, notwithstanding the thorough washing of the cavity through the drainage-tube. I believe it would be better in such cases to secure the most thorough vaginal drainage, not only through the opening made by the enucleation of the uterine cervix, the same being packed with gauze surrounding a drainage-tube, but by making a free and direct opening from the bottom of the cavity in the broad ligaments into the vagina. It has been taught that the dangers of removing cysts or fibroids from the broad ligaments lies in the disturbance of important plexuses of nerves. My observation leads me to believe that the shock is not materially great in such enucleations, and that the bad results following such operations are due to the use of drainage which does not properly drain. But while I secured the most perfect drainage in the case referred to, by bringing the drainage-tube up to the side of the pedicle, I would not advise abdominal fixation of a pedicle in cases in which nodular masses are enucleated from the broad ligaments and even imbedded in the region of the cervix, where we would form a pedicle, believing that these cases can be treated more successfully by removal of the entire cervix, with free vaginal drainage.

As I suggested at the beginning of this paper, one of the great objections to total extirpation of the cervix and vaginal drainage is that we make an additional wound and have a possibility of vaginal infection. I concede further, that it is not always possible to render the vagina surgically aseptic. I have had a number of cases in which I used the most thorough antiseptic douches, and then sought to wash out the cavity of the uterus for the purpose of packing the same with iodoform-gauze and also to close the external os by firm suture, and found the cervix and external os so retracted into one of the cul-de-sacs or behind the pubes that it was impossible to reach it with any form of speculum in such a manner as to enable me to pack the cervical cavity or stitch the same, so that during our handling of the tumor we found a large quantity of bloody purulent discharge in the vagina which had escaped from the external os. In a large percentage of cases a thorough washing of the uterine cavity, packing the same with iodoform-gauze, and then stitching the external os will prevent this purulent fluid from escaping into the vagina during our handling of the tumor. Then thoroughly washing and even scrubbing the vagina with a brush and packing the same, including all its cul-de-sacs, with iodoform-gauze, will give us a reasonable assurance that his canal has been made aseptic, and the dangers of infecting the peritoneal cavity reduced to the minimum.

In a conversation with Dr. Bantock, of London, I expressed the hope that in the near future we would be able to remove fibroid tumors with the same low rate of mortality that follows our work in removing ovarian cysts. The good doctor replied: "This can never be done, for the reason that the anatomical conditions are essentially different." Carefully reflecting over this statement, I have become thoroughly convinced that a more thorough study of the essential anatomic conditions that exist in an abdomen containing a fibroid tumor, as compared with one containing an ovarian cyst, would enable us to bring the mortality of the two operations to something approximating equality.

I have a number of times left the greater portion of the uterine arteries remaining in the pelvis of the patient, but from the results I had I was thinking that the possibility of infection through the rich chain of lymphatics at the side of the uterus was greater in such cases than when the broad ligaments were thoroughly constricted by ligature all the way down to the opening in the vagina. This led me to express, in the Chicago lecture already referred to, my preference for cutting around the cervix rather than enucleating it. But carefully reflecting upon the statement of Dr. Bantock, that the anatomic conditions are essentially different in fibroid tumors from what they are in ovarian cysts, I have also become convinced that we often charge the fault to the technique which we have used in treating the pedicle, when the cause of death ought to be explained in some other way. For example, when the parietes of the abdomen are rendered thin by the pressure of an ovarian cyst, the blood-supply is reduced so that all the intra-abdominal viscera are more or less anemic. This condition is in marked contrast with the hypernutrition often present in and about the pelvis which contains a fibroid tumor. I am quite sure that deaths occur in consequence of our losing our heads in the determination to make the pedicle and all pertaining thereunto as perfect as possible, and neglecting perfect approximation of the abdominal incision always as long as the tumor, including its peritoneum. I have many times cut through two inches of fat to reach a fibroid tumor, and unless such a wound be thoroughly closed by three rows of sutures, the internal one being of fine silk, with stitches not more than one-fourth of an inch apart, and then making absolute sero-serous approximation, there is danger of infecting the peritoneal cavity by discharges leaking into the abdomen. Too often we take extreme precautions to nicely adjust the outer integument, when it would be better, if any leakage from the wound is to occur, that it shall pour outward and not inward. Again, the more vascular condition of the peritoneal cavity and its contained viscera, in cases of fibroid tumors as compared with ovarian cysts, warns us of the greater intolerance of rough manipulation, making it necessary to protect intestines and viscera as much as possible during operation by hot sterilized towels or sponges, by temporarily bringing the wound together over the intestines with a temporary stitch or volsella, and, *above all and over all*, by the *most thorough irrigation* of the peritoneal cavity with water at a temperature not less than 110°, we should wash out, not only after the work has been completed, but at intervals during the work, so as to undo the harm we do to the vasomotor nerves distributed to the pelvic and abdominal viscera. Half a dozen pitcherfuls of water are none too many, and if we have produced material shock, as evidenced by the pulse, a few pitcherfuls of water poured through the drainage-tube and allowed to pass out again have at times, as I believe (*permit me to say, I absolutely know*), saved lives that otherwise would have been lost. The operator of to-day who seeks to do away with the "wash-out" and the drainage-tube on all occasions, on theoretic grounds, is rolling the wheels of progress backward. The skilful management of a patient during shock is of very great importance, indeed. The use of opium to put

the disturbed tissues at rest has the genuine ring of surgical wisdom. The use of strychnin to keep up the tone of the nerves distributed to the intestinal tract, and thereby counteract the tendency to gaseous distention of the bowels, is one of the precious comforts to the anxious abdominal surgeon when his patient is low in shock.

When Ephraim McDowell did his first ovariotomy the citizens surrounded his house, threatening his life because he was about to "butcher a woman." The sheriff of the county interfered. At first they refused to listen to his pleadings for the Doctor's life. Finally he struck a compromise, the mob agreeing to let the Doctor alone if the woman recovered, the sheriff agreeing not to interfere with the mob if the woman died. This was a crucial test of the Doctor's heroism. Other heroic surgeons for years did not hesitate to remove ovarian cysts, but allowed women to pass on to their graves if the diagnosis convinced them that the trouble was a fibroid tumor. Still later, surgeons removed fibroids if they were pear-shaped and a pedicle could easily be found, allowing women to pass on to their graves if the examination showed the tumor to be deeply imbedded in the pelvis by nodular masses. Even the great and noble Dr. Thomas Keith, after battling with fibroid tumors with as good a percentage of recoveries as anyone at that date, finally abandoned myomectomy, resorting to the use of electricity, and only wished that he had back from their graves the patients that had died from his operations for fibroids. Thank God, there were others to take up the work when he became discouraged. The old adage that the qualifications of a surgeon are "the head of an Apollo, the eye of an eagle, the heart of a lion, and the hand of a woman," is eminently true, especially as regards him who would seek to be successful in removing fibroid tumors. The head to plan and to meet the surprises which spring on us during such work; an eye to see quickly the exact constriction of every ligature and adjustment of every suture; the lion's heart to press forward in this aggressive work, when our percentage of recoveries might be better if we would let fibroid tumors alone, especially bad ones; the nimble wit in the end of the fingers, backed by an indomitable will to skilfully and speedily perfect the adjustment of the last suture with the same precision as the first, make a combination of qualifications suggesting that the surgical type of a man is not to be found thirteen times in a dozen.

No other operation so thoroughly demands that the trinity of surgery be carried out—thorough preparation of the patient, thorough operating, and skilful after-treatment. As American surgeons, we have a right to be proud that no nation leads us in the originality of methods or successful results in removing fibroid tumors. Almost every State of our Union has operators who would venture to give a woman with a fibroid tumor the chances of life which surgery offers.

With a more thorough and perfect understanding of the essential anatomic conditions which make an abdomen containing a fibroid tumor different from one containing an ovarian cyst, with the realization of the ideal method applicable alike to all fibroid tumors, regardless of their morphology—a method as successful in the hands of the many skilled operators as the few—may we not hope to say, with all sincerity, that fibroid tumors can be removed with the same low rate of mortality which has placed ovariotomy among the brilliant triumphs of the century. Then shall the torch lighted by McDowell in the midnight darkness shine forth with resplendent glory in this brilliant noonday of abdominal surgery. The century, which in a few years will have rolled on to the eternal past, has placed in the magnificent temple of medicine many pillars of surpassing beauty and grandeur, while its surgical columns have risen high toward Heaven, where as gilded towers they fain would vie with the God-given sunshine in dispelling the chill and gloom of human agony.

> Chirurgia's tower, thy lights respleudent blaze,
> Dries woman's tears and lengthens out her days.
> McDowell and Sims, of our Columbia's clime,
> Began the work, moved onward, nigh sublime.
> To woman, then, these blessings shall be given,
> Queen of the home, and home the type of Heaven.

Abdominal surgery is proud of her past because it is prophetic of her future. Even now, in the vital present, it shall stand forth unchallenged as the crowning glory of all science and of all art.

CLINICAL MEMORANDA.

LAMINECTOMY FOR FRACTURE OF DORSAL VERTEBRÆ.

BY CASPAR W. SHARPLES, M.D.,
OF SEATTLE, WASHINGTON.

THE case forming the subject of these notes is reported to add to the scant collection of such cases, and to offer a small degree of encouragement for operation upon similar ones. The case and its progress show only a partial success; it was operated upon by me through the courtesy of Dr. D. A. Mitchell, of this city.

C. B., twenty-eight years of age, on May 8, 1893, was injured in a peculiar manner. A very small steamboat was suspended by a rope passing under her stern and attached to the machinery of a pile-driver; the boat was raised so that a man could pass under it in a row-boat. While the patient was at work under her in this way, the rope broke and the steamboat fell on him, doubling him up in the boat, and sinking him and the small boat under the water. As he came up he caught the side of the boat, and thus was saved from drowning. His legs were paralyzed at this time and the pain around his body was intense.

On the next day I first saw him, and found complete paralysis of both motion and sensation from the waist down. The line of separation between esthesia and anesthesia was at the eleventh dorsal vertebra. The bladder and bowels were paralyzed. The pain was intense around his body, and it was aggravated very much by motion. The fracture was very evident by reason of lateral motion and the detection of the fragments at the eighth dorsal vertebra, although the swelling was very great. Blood was extravasated over a very large area, and, on opening the tissues, the clotted blood rolled out; so extensive was the fracture as to separate the tissues, so that it was not necessary to dissect them from the laminæ. The lower fragment of the column projected an inch posterior to the plane of the upper one.

To see the condition of the dura, and, if advisable, of the cord, the laminæ of three vertebræ were removed. The dura was found intact; the cord was bent at quite a sharp angle; pulsation was absent. On the under side of the cord were several small fragments of bone pressing upon its anterior surface. These were removed, together with a portion of the body of the eighth dorsal vertebra as large as a cube three-fourths of an inch in size. This was found free. Blood-clots were numerous in the canal.

The tissues were found to be separated from the anterior surface of the bodies of the vertebræ, so that a finger could be passed around. The dura was not opened. An attempt was made to fasten the bones in position by wiring, but this was futile. Free drainage was provided for. On account of the inability to dress in a plaster cast at once, long wooden splints were fastened around the man's body. For a few days the temperature was quite constant at 101°, rising once or twice quite suddenly. The day following the operation he spoke of a tingling in his feet, and on the next day there was a desire to urinate. The man passed a few drops voluntarily and said that he could tell when his feet were touched.

The subsequent history is as follows: Paralysis has been constant and complete. A spastic condition of the muscles of the legs has developed, which is more marked on the right side. The skin-reflexes generally are exaggerated, though the cremasteric reflex is about normal. Anesthesia has been and is complete from a line drawn around the body on a level with the crests of the ilia and extending down to two inches above the symphysis. The line of demarcation is sharp and has descended since the operation. Control of the bladder and rectum is gone. The patient thinks that at times he feels a desire to urinate, but this may not be so. He suffers no pain. Two small bedsores have formed over each trochanter, but are now becoming smaller. There is a small fistula in his back and the back is stiff. He can sit up, though he rarely does this, being more comfortable lying down. The general nutrition has been good all along and he has gained flesh.

In attempting the operation, I, of course, realized that the mortality-rate was high, yet Phelps has stated that the mortality-rate of the fracture from crushing or bending is the highest, and such cases are, therefore, less desirable for operation, as the cord, too, has been crushed.

The mortality of fracture of the spine is large. Agnew reports seventy-three cases treated at the Pennsylvania Hospital, of which forty-seven died in the house, seventeen were removed, and no doubt subsequently died, one was cured, and eight were unrecorded, so that probably only one case out of seventy-three recovered. Ashhurst has analyzed sixty-one cases in which operations were performed, giving a mortality of 73 per cent., and only three cases of fair results. He condemns the operation except for exceptional cases.

In cases that are not operated upon, Cooper and Séquard give the mortality as 99 per cent., and Erichsen has said that all cases are fatal, while Ashhurst gives the mortality at from 61 to 78 per cent., according to the seat of the injury. It would not be just to compare the results of operations for disease of the cord and those for fracture, performed either at the time of the injury or later. Many cases that do not die as the immediate result of the injury die later of myelitis and its consequences. This is due to the traumatism or hemorrhage of the cord. The injury of the cord may be caused by compression at the time, or by constant compression from the deformity, or from spicules of bone. To overcome this possible condition is the indication, and this can be better done by an operation than in any other way. Should a fragment of bone be pressing on the cord or into its substance, it can be removed, which removal would diminish the dangers of secondary inflammatory action. These facts I offer as the one reason for the operation.

The dura was not opened in my case, for I could not see how any possible good could come of it. Should the cord be injured, it was from compression and crushing, and for this nothing could be done.

There is yet another point to be met, and that is the time of operation. It is easy to see that every hour of delay after the patient attains a state to warrant an operation is so much added to the dangers of secondary inflammatory action; and so it seems to me that, if an operation be justifiable, it should be done as soon as there is recovery enough from shock to justify it. In many of the cases of which I have seen accounts, the operation has not been performed till late, and then it could not be of the same value as if performed early. The mere operation, while adding to the gravity of the case, is usually recovered from. It should be remembered, however, that even a late operation may favorably change the conditions.

Most favorable cases have been those in which only the laminæ have been injured, and Ashhurst recommends that only such cases should be operated on. These are the cases that, if let alone, would make a recovery, and if the operation be restricted to those cases, practically the indications for the operation are not met. I think, however, that it is better to operate on cases of injury to the laminæ than to take the chance of a spicule of bone in the cord.

In cases like the one reported, the best that could have been hoped for would have been a fibrous union between the bodies of the contiguous vertebræ, and even this would not have been enough to permit any very extensive use of himself by the patient. Yet judging from the standpoint of human life, this man is now alive and free from suffering, while, had he not been operated upon, considering the extent of the injuries, he no doubt would have died, though even now he is only a helpless cripple.

THE IDENTIFICATION OF THE LARGE AND OF THE SMALL INTESTINE.

By J CHALMERS DA COSTA,
OF PHILADELPHIA.
DEMONSTRATOR OF SURGERY IN JEFFERSON MEDICAL COLLEGE.

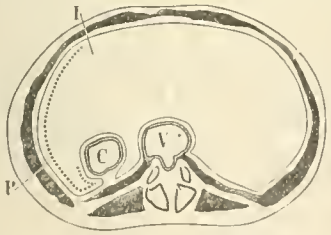
In abdominal operations it is frequently imperatively necessary that we recognize with certainty the large intestine or identify positively the small bowel. The size of the tube will not always help us in this recognition, as a small intestine may be enormously large because of distention, and a large intestine may be contracted to the size of a finger because of obstruction above.

The longitudinal muscular fibers of the large bowel are accentuated in three portions, and these accentuations constitute the three longitudinal bands which begin at the cecum, and terminate at the end of the sigmoid flexure of the colon. Each band is composed of a number of shorter bands, and the shortness of these constituent bands permits the sacculation of the large intestine. Longitudinal bands and sacculation are not met with in the small gut, and we have in their presence or absence a means of identification in many cases; but when the colon is much distended the bands cannot be seen, and the sacculation disappears. (Edmund Owen.) From the large intestine only spring the appendices epiploicae, small overgrowths of fat in pouches of peritoneum, but these appendices are sometimes not well marked, except upon the transverse colon, and when emaciation exists they may almost entirely disappear.

The relatively fixed position of the large intestine and the free mobility of the small bowel are important points of distinction. The foregoing statements indicate that it is not always easy to distinguish between colon and small gut, and that according to old rules it may often be necessary to make large incisions, to look as well as feel, and to extensively handle the bowels. Any scrap of knowledge which will shorten an abdominal operation, which will permit of as certain work through a smaller incision, and which will diminish handling of intra-peritoneal structures, must tend to increase the chances of recovery.

For these reasons I wish to suggest a method of bowel-identification, which rests upon the fact that each bowel has a posterior attachment, and that the origin of the attachment differs according to the bowel which it supports, that a single finger can detect the origin of the peritoneal support of any section of the bowel, and this origin being known, the portion of bowel which it supports is with certainty deducible.

In an exploratory operation, for instance, the finger comes in contact with the bowel; in order to determine whether it is a large or small bowel, note first if the structure is movable or firmly fixed; next pass the finger over the bowel, and let it find its way posteriorly. If we are dealing with a small bowel the finger will reach the origin of the mesentery between the left side of the second lumbar vertebra and the right sacro-iliac joint; if we are dealing with the large bowel, the finger will reach the origin of the meso-colon, or the point where the colon is fixed posteriorly and to the side.



In an operation we may wish to find at once the large bowel. In operating for appendicitis, after making the incision (I in illustration), carry the finger along the parietal layer of peritoneum (first outward, then backward, finally inward, as shown by the dotted line in the illustration); the first obstruction it meets is the colon. The head of the colon is found by passing the finger downward, and the appendix is readily detected, usually internally and posteriorly. Professor Ashton, of the Medico-Chirugical College, has kindly tried this plan in several cases of appendicitis, and he tells me it greatly simplifies the finding of the large bowel and the appendix.

In the operation of iliac colostomy the same plan can be pursued. The incision is made upon the left side, and the finger follows the parietal peritoneum outward, backward, and inward. The first obstruction it meets with is the descending meso-colon.

This method of differentiating between the large and small bowel is so simple that the writer hesitates to record it through the conviction that it must already be known; but having demonstrated it repeatedly in the sugical laboratory at Jefferson College, without having it claimed as old knowledge, and being unable to find it in text-books, it may seem proper to describe the plan, and to urge that it be tried by abdominal surgeons.

MEDICAL PROGRESS.

Changes in the Colostrum and Milk of Nursing Women induced by Disease.—As the outcome of an analytic study in a moderate number and range of cases, Ludwig (*Archiv für Gynäkologie*, B. xlvi, H. 2, p. 343) has found that the amount of fat contained in the milk of nursing women is considerably increased in cases of tuberculosis (when any secretion of milk takes place at all), while the remaining constituents undergo no noteworthy change. In case of albuminuria, particularly if the amount of albumin lost is large, and also if the amount of albumin is small if the nutrition is also impaired, the amount of proteids in the lacteal secretion is notably diminished and the amount of sugar is slightly diminished. In case of profound anemia following hemorrhage in the course of labor the lacteal secretion is deficient in solids, in fats, and in sugar. In case of marked pyrexia the amount of solids and of fats falls, while the amount of proteids and sugar is variable. The milk of syphilitic nursing women was found to be poor in solids, in fats, and in sugar, while the amount of proteids was variable.

Cystinuria in Four Members of One Family.—Pfeiffer (*Centralblatt für die Krankheiten der Harn- und Sexual-Organe*, Bd. v, H. 5, p. 187) has reported the case of a family in which the father and several paternal uncles were gouty, while all of the children, two daughters and two sons, presented cystinuria. This condition was observed in the eldest sister after the passage of a cystin calculus, following an attack of renal colic. She had long suffered with cystitis and pyelitis, but the cystinuria was not discovered until an examination of the calculus led to an investigation of the urine for its presence. Some time after the passage of the stone cystin could no longer be found in the urine. The urine of a younger sister and of two brothers also contained cystin, while that of the mother and of the father, as well as that of two children of the eldest daughter, did not.

For the Sterilization of Sponges, either new or soiled by use, Contejean (*Compt. rend. hebdom. des Séances de*

la Soc. de la Biologie, 1894, No. 11, p. 290) recommends the following mode of procedure: The sponges are first washed with soap and water, then immersed for some time (even for half an hour without harm) in a 1 to 5 solution of nitric acid, then washed in a 2 per cent. solution of sodium bicarbonate (first heated and then cooled), then immersed for an hour, and well stirred, in a 5 per cent. solution of carbolic acid heated to a temperature of 158°. The sponges may be kept in the carbolized solution, or they may be dried by heat. Before being used, any fluid that they contain should be expressed, and they should be placed for several hours in a saline solution, 7 parts to 1000.

The Relation between the Gastric Juice and Intestinal Putrefaction.—As the outcome of a special investigation, MESTER (*Zeitschrift f. klin. Medicin*, B. xxiv, H. 5, 6, p. 441) has found that under normal conditions intestinal putrefaction is induced as a result of the action of putrefactive microörganisms introduced into the digestive tract in large measure with the food, and in a degree inversely proportionate to the activity of the hydrochloric acid of the gastric juice. It is thus increased with a diminution in the hydrochloric acid, and this becomes evident when meat relatively free from putrefactive organisms is used as food; while, when the proportion of hydrochloric acid in the gastric juice is normal, similar conditions of the food are without influence upon intestinal putrefaction.

Gastroplication is the term employed by BRANDT (*Centralblatt für Chirurgie*, 1894, No. 16, p. 361) to indicate an operation for mechanically correcting abnormal dilatation of the stomach, especially when no organic cause for the condition can be found. The procedure consists in exposing the viscus and folding and suturing the peritoneal and muscular coats of the anterior and posterior walls of the stomach upon themselves. A case is reported in which the operation was successfully performed.

THERAPEUTIC NOTES.

Fatal Intoxication with Medicinal Doses of Creosote.—ZAWADZKI (*Centralblatt für innere Medicin*, 1894, No. 18, p. 401) has reported the case of a woman, forty-two years old, who for a few weeks had complained of a dry cough, with sharp pains in the right side of the chest, for relief from which creosote had been prescribed in doses of six drops thrice daily. Soon after having taken the third dose the woman felt pain and difficulty in swallowing, with hoarseness, and shortly abdominal pain, vomiting, diarrhea, and irritative cough were superadded. Weakness was a pronounced manifestation. Frothy saliva was constantly being ejected, and the breath had a distinct odor of creosote. There was in places a cloudiness of the epithelium upon the lips, the soft palate, and the pharynx. The soft palate was paretic, and, together with the root of the tongue and the posterior pharyngeal wall, anesthetic and analgesic. The vocal bands were paretic, the patellar reflexes normal, the entire left arm, the left hip, and the outer aspect of the leg, analgesic. Upon the right side of the chest posteriorly there was slight impairment of the pulmonary percussion-resonance, with roughness of the respiratory murmur and numerous moist and dry râles. The action of the heart was feeble, the pulse small and compressible. The urine contained a considerable quantity of albumin, together with tube-casts, but the presence of creosote could not be detected. Despite supporting treatment, collapse set in at the end of six days. Upon post-mortem examination two small oval ulcers with white bases, as if eroded, and with undermined margins, were found in the upper fourth of the esophagus; similar ulcers were also found at the pylorus. The mucous membrane of the stomach and duodenum was injected, reddened, and ecchymotic. The liver was cloudy and clay-colored on section. The kidneys were in a state of acute inflammation. There were numerous pleural adhesions, and the whole left lung and the lower lobe of the right lung, together with the brain and meninges, were hyperemic. The middle lobe of the right lung was in a state of interstitial hyperplasia. There was besides a verrucose endocarditis affecting the leaflets of the mitral valve. The spleen was cyanotic, and the endometrium was hypertrophied.

The Treatment of Syphilis by Hypodermatic Injections of Mercurials.—As the result of an elaborate collective investigation, WOLFF (*Therapeutic Gazette*, vol. xv, No. 5, p. 309) has determined that the treatment of syphilis by hypodermatic injections of mercurials is largely employed on the Continent of Europe, except in France. The best preparation is the corrosive chlorid, and next in order the mild chlorid, then the salicylate, the yellow oxid, the sozoiodolate and gray oil. Soluble preparations are to be preferred to insoluble ones. The mild chlorid seems to hold the first place as regards rapidity of action and permanence of effect. The duration of the treatment cannot be sharply defined; it should continue until all of the symptoms have disappeared. Untoward effects are uncommon, and especially so with the soluble preparations. Serious complications are to be avoided by the observance of proper care and cleanliness.

For Favus.—The Paris correspondent of the *Medical Press and Circular* is authority for the efficacy of the following treatment of favus. The hair is cut close around the affected parts of the scalp, which are then washed with ordinary soft soap. A compress saturated with the following mixture is applied three times daily:

R.—Thymol. . . . . ℥ss.
Chloroformi . . . . . f℥v.
Olei olivæ . . . . . f℥iij.—M.

As soon as the crusts covering the patches become detached the parts should be carefully epilated, and finally a solution of two parts of tincture of iodin and one of glycerin should be painted once a day over the denuded parts. The treatment extends over a period of a month or six weeks.

For Hemorrhoids.—

R.—Acid. carbolici . . . . ℥jss.
Acid. salicylici . . . . ℥ss.
Sodii biboratis . . . . ℥j.
Glycerini . . . . ad f℥j.—M.

S.—Inject slowly from 2 to 4 minims into the base of the hemorrhoid. *Practitioner.*

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SATURDAY, JUNE 9, 1894.

RATIONAL MILK-CONTROL.

EFFORTS to regulate the milk-supply have been among the most prominent features of modern sanitary legislation. Scarcely any civilized country is without some regulation, although much variation exists as to the standard selected. Milk, being a natural product largely composed of water, is not of constant composition, and rigid control includes usually only the adoption of a minimum percentage of solids. The earlier efforts at analytic supervision are now known to have been seriously in error. The specific gravity alone is no guide, and Wanklyn has pointed out that many a good milk was ruthlessly seized in Paris under the operation of a system in which the lactometer was entirely relied on. Even the earlier methods of analysis, including that developed by Wanklyn himself, failed to give a correct figure for the ratio between the fatty and non-fatty solids, and led to injustice in the practical application of standards.

So rapidly, however, does knowledge, especially in chemistry, progress, that analysts have scarcely succeeded in placing milk-analysis upon an exact basis, when it is learned that its percentage-composition is relatively of far less moment than has been supposed. It is now apparent that milk is an active distributer of disease, not so much through the practices of skimming or watering (except as the latter process may introduce impure water), but through the specific organisms derived from the animal or from the surroundings of the dairy. The great importance of these dangers can scarcely be over-estimated. Milk being the only animal food generally eaten in the raw state, it is plain that unless collected under circumstances of extreme cleanliness, it will be most dangerous. The employment of new methods of diagnosis, especially the use of tuberculin, has shown that a large proportion of dairy cattle is subject to tuberculosis, and constantly distributing this disease, in addition to which we have the liability of conveyance of typhoid fever, diphtheria, scarlet fever, etc., from the persons associated with the dairy-work. In the face of such dangers, discussion as to whether the legal limits for the composition of milk should be twelve or thirteen per cent. of solids, and nine or nine and one-half per cent. of non-fatty solids, seems puerile. These limits still form the principal features upon which many boards of health rely, but it is obvious that as tuberculosis is quite as abundant, if indeed it is not more so in high-grade cattle, mere richness is no guarantee of wholesomeness in milk.

The sanitary regulation of milk-production, therefore, including supervision of the water-supply, health of farm-hands and families, condition of cattle, facilities for keeping, transporting, and distributing milk, is the method by which the community will be protected, and under such systems serious adulteration will not be possible. The routine analytic work of a city or State sanitary bureau will throw very little light on the dangerous adulterations of milk. To establish complete supervision will undoubtedly involve the appointment of a "swarm of office-holders," who may "harass the people and eat out their substance," yet such supervision ought to be secured.

The title of this article is suggested by a circular issued by a commission of physicians in Essex County, N. J., which seems to point out the road to proper supervision, without the drawbacks of official methods. This commission has entered into a contract with the owner of a dairy who agrees to permit rigid inspection of his property, animals, and work-people; to furnish samples as required for analysis; and to allow publication of all results. The commission has no pecuniary interest in the results, and it is naturally expected that physicians will encourage such a system. The circular at hand, dated

March 6, 1894, details two analyses and inspections made during the latter part of February.

There can be but little doubt of the advantage of this system over compulsory inspection by officials secured under our present political influences. By encouraging honesty and progressiveness on the part of dairy-farmers much more is accomplished than the protection of the milk itself; the example is fruitful, and will influence other features of trade and commerce. It is true of "that monster, Custom" that "to the use of actions fair and good, it likewise gives a frock livery that aptly is put on." High as are the proportions to which food-adulterations and other systematic dishonesties have risen, something may be accomplished in the way of reform by moral suasion, and by encouraging honesty by publicly rewarding it. It is to be hoped that the milk furnished under the conditions enumerated will, as it should, secure a little higher price, and this fact, if no other, may induce other farmers to seek admission to the supervision, until all important dairies near our large cities may by amicable agreement be prepared to furnish safe milk. It should not need argument to convince anyone that such a result will be far more satisfactory than compulsory control over unwilling and insincere proprietors.

Some incidental points in the circular deserve criticism. It is universally acknowledged that the practical purposes of milk-analysis are met by a determination of the total solids and fat; by subtraction of the latter figure from the former the so-called solids-not-fat are obtained which give the valuable clue to the presence of added water. Slight variations of sugar, proteids, and ash, although of scientific interest, have no known sanitary significance, and it is pedantic to include determinations of them in an analysis intended for general circulation. It is somewhat surprising to see the determinations carried out to the third decimal place when the processes of analysis are scarcely exact to this point. Moreover, in the two analyses given in the circular the figures of the individual items—fat, proteids, sugar, and ash—sum up to the exact figure for the total solids, a result that must be either merely a coincidence or indicates that some datum has been determined by arithmetic and not by actual experiment. If the latter is the case the fact ought to be indicated.

Control of the milk-supply, as far as the detection of watering and skimming is concerned, can be secured by simple and rapid methods, and the introduction of elaborate routine should be discouraged as involving unnecessary expense. The large business of the Aylesbury Dairy Company, of London, has been controlled in the most satisfactory manner for many years, the last report of the chemist showing that during 1893 over twenty-eight thousand samples of whole milk, and nearly two thousand samples of cream, buttermilk, and skimmed milk, were analyzed in the company's laboratory, in which but two chemists are engaged. The analyses were almost exclusively limited to determinations of two of the three data—fat, specific gravity, and total solids—it being possible from any two of these to calculate with close accuracy the third. In the numerous prosecutions for violation of laws regulating the sale of milk it has been the almost invariable custom to omit determinations of sugar and proteids. The determination of ash is easily made, and is often included when watering is suspected. In milks obviously of good quality, such as those exhibited in this circular, even the figure for the ash is redundant.

The importance of the foregoing criticisms lies in the fact that in endeavoring to extend the system of voluntary non-official dairy-inspection like this Essex County case, the question of expense will be one of the most serious obstacles, and everything should be done to simplify the routine. Processes of milk-analysis accurate to within one-tenth per cent., costing less than one cent per sample, requiring no high analytic skill, and but a few minutes, are known, and the results, fat and total solids, are the analytic data that the interests of public hygiene need. Questions of effects of feeding, breeding, season, etc., may be left for the experiment-stations or the private laboratory, in which the more extended analyses may be made.

SOCIETY PROCEEDINGS.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

(Continued from page 624.)

Third Triennial Meeting, held at Washington, D. C., May 29th, 30th, 31st, and June 1st.

THIRD DAY—MAY 31ST.

DR. WM. M. POLK, of New York, read a paper on "The Conservative Surgery of the Female Pelvic Organs." His deductions were based upon a study of 164 cases in which he had performed abdominal section for disease of the appendages. Of these, 64 were operated upon by the radical method and 100 by so-called con-

servative measures. By the term conservative was meant the retention of all tissues having a reasonable chance of adding to the local or general well-being of the individual. Conservative surgery is applicable to traumatisms, non-malignant disorders, and the early stages of infectious disorders of the female pelvic organs.

The advisability of conservative operations on the perineum, vagina, and cervix has long been recognized and accepted. In speaking of myomectomy, Dr. Polk took the ground that when the tumors have pedicles or distinct capsules, and their number is not too large, operations for their removal may be indicated. Ligation of the broad ligament has been suggested in order to check the growth and lessen the hemorrhage. This operation seems to be capable of filling a valuable place for these indications. It seems to be better than the operation of oöphorectomy, but as yet our knowledge is insufficient to enable a more definite statement to be made.

One of the most conservative operations is curetting, with the drainage and depletion to be obtained by packing. This is applicable in all forms of endometritis and metritis, whether acute or chronic. In acute or subacute inflammation after abortion or labor, it is of great service if done at once.

In affections of the appendages it may be that efficient depletion can be secured by the cavity of the uterus, and will do much toward effecting a cure. The results should be best in the early stages of salpingitis and oöphoritis, but the chronic cases are not beyond the influence of this procedure. If done properly it is harmless and renders the secondary operation safer. The more Dr. Polk has employed this method of treatment the better has he been pleased with it. Women are better mentally and physically for the maintenance of menstruation and ovulation. Until recently many conditions of the tubes and ovaries were considered adequate causes for their removal. Such is not now the case. The functions of menstruation and ovulation should be preserved when possible, without sacrificing the patient's health or life. In cases of destructive inflammation of the appendages the operation is best done after the subsidence of the acute inflammation. The tendency of these inflammations is in the direction of resolution. There are many cases of occluded adherent tube in which the ovaries are in good condition. The same statement applies to some cases of pyosalpinx and many cases of hemato-salpinx. Dr. Polk's proposition was to remove such tubes and leave such ovaries. The nearer the patient is to Nature's menopause the less is the necessity for such conservatism. In early life it is urgently necessary. Dr. Polk has operated in 45 cases in this way, and in their ability to work and enjoy life the women are in as good condition as any equal number of cases of oöphorectomy. Mentally they are far better.

In 36 cases Dr. Polk had resected ovaries the seat of simple cysts or of blood-cysts; in all but 5 of these the results were entirely satisfactory. In 2 cases there was fresh development, and in 3 suppuration in the cyst occurred as a result of infection from the catgut used. When the tubes have been simply adherent they are released and allowed to remain. Twelve such cases have done well, with the exception of 1, in which gonorrheal infection spoiled the work. When the abdominal opening of a tube is closed this is opened and the fimbriated ring stitched back. Dr. Polk reported 5 cases from his own practice in which women had become pregnant after operations of this character. The precise question is, however, not so much the possibility of pregnancy as it is the mental, moral, and physical influences resulting from allowing the ovary or a portion of it to remain.

In the evening DR. ALFRED L. LOOMIS delivered the President's Address, which was entitled "The Influence of Animal Experimentation on Medical Science." He stated that the specific problems with which medical science deals are questions of the relative influence of multiple forces on the production of given results. Only the deepest ignorance can fail to recognize that the forces concerned in the simplest change of inorganic nature are so numerous and their relations so complex that they defy recognition under uncontrollable conditions, while in the organic world the task is even more hopeless. Experimentation, therefore, in which one or more of the involved forces can be controlled, becomes an absolute necessity in all scientific investigation. However clear the mental analysis, however accurate the logical demonstration from cause to effect, it is possible by experiment alone to prove that no involved force has been overlooked. Is it not strange that medicine should be denied the right to follow those imperative methods of scientific research which are so unquestionably accorded to every other science? It is not a little surprising that men with an appreciation of the necessity of experimentation should for so long have preferred to be its subjects, and that even to-day so many refuse to yield the place to animals. For example, in widespread epidemics we note the effects of an infection on perhaps half a million of human beings, with a great sacrifice of human life. On the other hand we study in laboratories the cause of the epidemics with a comparatively small sacrifice of animal life.

In entering upon the consideration of this subject Dr. Loomis fearlessly laid down this proposition: Every distinct advance, every established principle, and every universally accepted law of medical science has been in the past and will be in the future the direct, if not the immediate, result of animal experimentation. He then passed in review some of the obvious and conclusive proofs of this proposition.

It is not too much to claim that during the latter half of the present century the results obtained from experiments on animals have done more than all the observations of the preceding centuries to raise medicine from conditions of vagueness to conditions of exactness. From the time of Aristotle, who proved that the blood, brain, and spinal narrow in animals have no sensation, down to the present day, animal experimentation has been practised by all investigators who have gained any definite knowledge of the more important phenomena of animal life.

Galen must be regarded as the pioneer in this line of investigation. By his experiments on living animals he showed that arteries contain blood, that the lungs passively follow the movements of the chest, and that the diaphragm, although the most important, is not the only muscle of respiration. Further, by section of the spinal cord and of the recurrent laryngeal nerve he demonstrated

the nervous control of the voice and explained the mechanics of respiration. He also advanced the knowledge of the functions and movements of the alimentary canal, and laid the foundation of our knowledge of the functions of the brain and spinal cord. The results of his experimental work are now as conclusive as when first made, and are the only part of his vast labors which have stood the test of modern investigation.

From Galen's time to Harvey's great discovery little experimental work was done, and during this time medicine ceased to advance. Harvey's demonstration of the circulation of the blood, in 1620, rests entirely on animal experimentation, as is shown by his writings.

The next series of important investigations on animals were applied by Galvani and Volta to the nervous system.

In 1664 Robert Hook, by inflating the lungs of animals by means of a bellows, demonstrated artificial respiration. The experiments of Boyle and of Priestley in the seventeenth century laid the foundation of our knowledge of the respiratory process.

The injection of fluids into the bloodvessels of animals was first done by Dr. Christopher Wren. In 1666 Richard Lower performed the first transfusion, and the following year Dr. Denis performed the same experiment on man.

In the middle of the eighteenth century Haller proved that all motion in the human body proceeds in great measure from the brain and spinal cord. He also demonstrated that irritation of the peripheral end of a severed nerve causes contraction in the muscle to which it is distributed. This was followed by the experiments of Sir Charles Bell. At the beginning of the present century Magendie demonstrated the difference between the anterior and posterior roots of the spinal cord. His experiments on animals, by the injection of various medicinal substances, enabled him to lay the foundation of the doctrine that remedies exert their action upon special structures and organs. In this line of work he was followed by Claude Bernard. It is perhaps a conservative statement that, excluding medicinal foods, 90 per cent. of all our medication is made definite and valuable by this principle alone. Magendie, Bernard, and Loget established by their experiments the doctrine of recurrent sensibility, and this was followed by the discovery of Marshall Hall of reflex action of the spinal cord. The doctrine of vasomotor action was practically demonstrated by Bernard's experiments.

John Hunter, in 1785, by his experiments on dogs, established the fact that injuries to healthy arteries are soon repaired, and that ulceration after ligature occurs only when the vessel is diseased. These experiments led him to apply ligatures for the cure of aneurism to healthy portions of the arteries. Hunter first learned by experiment on pigeons and young pigs that the growth of bone is from the periosteum.

As we witness some capital operation performed at the present day without pain, almost bloodless, followed by neither fever nor suppuration, we may ask how far these results are due to experimentation on animals. The effect of chloroform was discovered through experimentation on the ant. Simpson practised and perfected his use of chloroform on animals before he placed his first patient in a state of anesthesia. That other great alleviator of pain was first used on dogs.

These results are sufficient to exalt animal experimentation to the first place as a means of scientific advancement.

The first important step in the field of etiology, based on animal experimentation, was made in 1850, when it was proved that splenic fever could be communicated from animal to animal by inoculation, and the first hint of bacteriologic study was given by the discovery constantly in the blood of these animals of little thread-like bodies.

About the same time Virchow made his observations on trichinosis.

Villemin inaugurated an important era when he established the fact that tuberculosis was an infectious disease. The invaluable studies of Pasteur introduced us into a new world of knowledge. He not only obtained pure cultures of organisms, but also studied their life-history and placed bacteriologic science on a firm basis. The crowning glory of Pasteur's work came with the discovery of attenuation of bacterial toxic products. It is not possible to point to a work of richer or grander promise, yet it is a work that was possible only by experiments on living animals. The application of Pasteur's doctrine by Mr. Lister to the antiseptic treatment of wounds has been a full confirmation of this principle.

The discovery of the bacillus tuberculosis by Koch marks another brilliant epoch in medical science.

Within the past two decades animal experimentation has accomplished more in the field of cerebral localization than all the preceding centuries of carefully recorded cerebral symptoms studied in the light of post-mortem investigation. It has opened a new field of operations.

From this history, it seems evident that most, if not all, of the real advances in medicine have been made possible through experimentation. This review of what our profession has done is not a plea for mercy—it is a cause for pride. Until infinity repeals the edict which gave man power over all created things, the right to claim the services of the brute can never be denied him who devotes his life to the service of mankind. We glory in our experimental work because we know the tenderness of cruelty, the balm of pain, the life whose birth is only in the throes of death. From the ignorant we expect to receive only censure, but from those who in the valley of the shadow of death have learned to know what manner of men we are, I have faith to believe that the reply will come, "We have trusted you with the lives of our loved ones, we intrust to you God's dumb creatures."

Fourth Day—June 1st.

At the business meeting, Dr. Nevins B. Hyde presented on behalf of the American Dermatological Association the following resolution, which was adopted:

Whereas, The American Dermatological Association recognizes the importance of the undoubted existence of leprosy in North America; therefore,

Resolved, That the Congress of American Physicians and Surgeons be requested to memorialize the Congress of the United States of America with the view to the appointment of a commission of five to investigate the prevalence of leprosy in the United States of America and in the countries upon its borders, and to suggest means for the control of the disease.

DR. WILLIAM H. WELCH, of Baltimore, stated that a bill had been presented in Congress prohibiting experiments on animals in the District of Columbia, and he presented the following resolution, which was adopted:

Whereas, The attempt in other countries to regulate by legislation the practice of experimentation upon animals has proved most disastrous to the progress of medical science and art,

Resolved, That the Congress of American Physicians and Surgeons enters its most earnest protest against any legislation tending to interfere with the advancement of medicine by means of experimentation upon animals conducted by properly qualified persons.

DR. L. MCLANE TIFFANY, of Baltimore, offered the following resolution, which was adopted:

Whereas, The Army Appropriation Bill reduces the number of medical officers in the army by twenty-five, and also reduces the appropriation for the Library of the Surgeon-General's Office from $10,000 to $7000,

Resolved, That it is the opinion of this Congress that these proposed reductions are unwise and are contrary to the best interests not only of the Army, but of the medical profession of this country, and of all who depend upon them for skilled professional services, and that we respectfully request our Representatives and Senators to so amend this bill as to prevent the reductions above referred to.

The question of amendment of the By-law relating to the place of meeting was brought up and its consideration postponed until the next meeting, when it should be made the special order for the first day's session.

The Congress then proceeded to its scientific work. The first portion of the afternoon was under the direction of the American Laryngological Association, and the subject for consideration was the Surgery of the Accessory Sinuses of the Nose. The first paper was on "Diseased Conditions of the Ethmoidal Sinuses," by DR. F. H. BOSWORTH, of New York. He said that diseases of these sinuses differ from diseases of the other sinuses in the anatomic peculiarities and in their symptoms. In the other sinuses there is a single large cavity, while in the ethmoid there is a mass of small cells more or less completely separated from each other. In order to establish a radical cure it would be necessary to open each one of these cells. This is impossible, and therefore the separating walls must be broken down and a single cavity formed.

In affections of the other sinuses the principal symptom is the occurrence of a purulent discharge, while ethmoidal disease sets up a train of symptoms more or less neurotic in character, such as headache, intra-orbital pressure, sneezing, asthma, and interference with the action of the brain. Ethmoidal disease is more frequent than is commonly supposed. There are three varieties of disease of the ethmoid: the extra-cellular myxomatous, the intra-cellular myxomatous, and purulent ethmoiditis. These varieties are really simply successive stages of one and the same affection. As the disease progresses the mucous membrane may project into the nasal cavity in the form of small polypi. Another result may be a crowding out of the middle turbinated bone, from distention of the ethmoid cells. The final result is suppuration, and the pus may be discharged through the anterior or through the posterior cells.

Treatment in these conditions should be instituted early, if possible before the occurrence of suppuration. In acute ethmoiditis the ordinary measures employed in acute rhinitis are indicated. Of all measures the douche is to be regarded as the most valuable. One or two gallons of water, rendered saline and as hot as can be borne, should be passed through the nose twice daily. This is devoid of danger, provided the patency of the nostrils is determined beforehand and the water is passed in the narrower nostril so as to obviate any interference with its discharge.

In the chronic stage surgical treatment is demanded when other measures have failed. The object of the treatment is to relieve the intra-cellular pressure. To remove the projecting portions the snare answers the purpose best. In operating on the ethmoid cells a small burr attached to a dental engine is the best instrument. The operation usually requires several sittings, and care must be taken on account of the thin bone separating the cavity from the orbit and from the brain. The operation is not especially painful and can be done under the application of cocain.

Of 97 cases of ethmoid disease, 3 presented carcinoma and 1 sarcoma. Of the simple inflammatory cases, 15 in number, 9 were cured, 3 improved, and 3 disappeared. There were 29 cases of myxomatous degeneration, of which 12 were cured, 10 improved, and 7 were seen but once or twice. There were 22 cases of myxomatous change, with polypi; 9 were cured, 10 improved, and 3 disappeared. There were 27 suppurative cases; 8 were cured, 12 improved, and 7 disappeared. In nearly all of these cases radical measures were employed.

DR. J. H. BRYAN, of Washington, read a paper entitled "Surgery of the Maxillary Sinus." He said that of the surgical affections of the antrum empyema is the most important, and the principal question that has arisen in regard to its treatment has been as to the method of opening the cavity. The washing out of the cavity through the natural opening has been strongly advised. This is applicable to acute but not to chronic cases, and the results are uncertain. In the majority of cases an artificial opening is necessary. If there is a carious tooth present it should be extracted, and frequently in this way the cavity will be opened; if not, it will be necessary to establish a communication by a trocar or small trephine propelled by an engine. The opening should be large and a metallic drainage-tube introduced. If the anterior wall of the antrum shows signs of weakening the opening may be made at this point. If it is desired to enter the cavity from the nose it may be done through the inferior meatus by a spear-shaped knife, but it is better to use the trocar or drill. After the cavity has been opened it should be washed out with mild antiseptic solutions.

When the case is an obstinate one, the opening should be enlarged so that the cavity may be thoroughly explored with a probe, the little finger, or the endoscope. This will often show the presence of spots of ulceration, necrosis, supernumerary teeth, etc., as the cause of the trouble.

DR. J. N. MACKENZIE, of Baltimore, also called attention to the various methods of opening the antrum. Washing out through the natural opening is not applica-

ble to many cases, for it is often difficult to find the opening and this is so even after death. In order to obviate this difficulty, it has been proposed to remove the inferior turbinated bone, but this procedure does not seem justifiable in the majority of cases. It has also been proposed to make an artificial opening below the natural opening. This is rather difficult to accomplish, and the hemorrhage is sometimes great. The operation of entering the antrum through the canine fossa should only be performed in cases of growths, or when the wall of the antrum is so thin that it is an easy matter to pierce it, and when, if the surgeon does not make an opening, the antrum will discharge spontaneously. By far the best operation for gaining access to the antrum is that through the mouth, by the extraction of a tooth, whether sound or decayed, or by going through the alveolar process without the extraction of a tooth. Dr. Mackenzie considers this method far superior to any other. The opening thus made furnishes drainage from a dependent point, and when injections are made through the opening, most of the fluid escapes through the nose. The objections that have been urged against the operation are that it involves the loss of a tooth, perhaps sound, that food may enter through the tube, and that there is danger of microbes gaining entrance from the mouth. These objections are, however, without weight. There is only one contra-indication, and that is the presence of an edentulous alveolar process. In such a case the operation had better be done through the nose.

Dr. John O. Roe, of Rochester, read a paper on "The Surgery of the Maxillary Sinuses." He pointed out that the treatment of cases of disease of the maxillary sinuses is largely surgical, on account of the fact that they are largely out of reach of ordinary medicinal treatment. Most cases of ozena are, in all probability, due to discharge from some of the sinuses of the nose. In cases in which the discharge does not rapidly subside under treatment, a free opening should be made. If there is no history of long-standing disease, the treatment should be begun with injections through the natural passage. If the case is recent, the discharge persisting after an acute inflammation, this may bring about a healthy condition. When such treatment cannot be employed an artificial opening should be made. When the teeth are sound the opening can be made through the zygomatic region or through the meatus. If the disease does not rapidly subside, it is probable that there are conditions of the cavity which must be dealt with radically. Then a free opening should be made and the diseased conditions removed. The opening should be maintained until the disease is entirely cured. The following conclusions were presented:

The old idea of considering drainage and cleanliness as the treatment, regardless of the exciting cause, should be abandoned. In all cases in which the purulent discharge does not cease after a reasonable time, the cavity should be freely laid open, so that the exact pathologic condition can be determined. The opening should be maintained for inspection and treatment until the disease has been cured.

The second portion of the session was in charge of the American Neurological Association.

Dr. James J. Putnam, of Boston, read a paper entitled "The Influence of Infectious Processes on the Nervous System; Pathology and Etiology." He maintained that the relation of nervous diseases to infectious processes may be studied from the point of view of the bacteriologist or that of the neurologist. It was the latter that was taken up. The nervous system may suffer from local bacterial action; from the effects of toxic products; from the effects of a lowered vitality of the nervous system, making it prone to show signs of constitutional weakness or fall a prey to new causes of disease. The term "infectious" was, for convenience, used somewhat loosely to denote the action of specific viruses as well as that of specific organisms.

The infectious diseases that would be admitted by everyone to cause nervous affections are: tetanus, rabies, syphilis, tuberculosis, diphtheria, lepra, gonorrhea, typhoid fever, erysipelas, influenza, mumps; the acute exanthemata, the pyogenic organisms, the diplococcus lanceolatus, malaria, actinomycosis, may bring about the same result. The nervous affections that follow acute infectious diseases are not always due to the primary infection; sometimes they result from secondary infection; or they may be only an indirect result.

The diseases of the nervous system which are suspected, but not fully proved, to be of infectious origin, are especially beri-beri, poliomyelitis, Landry's disease, certain forms of myositis, neuritis, myelitis, some of the cerebral palsies of children, chorea, disseminated sclerosis, and other cerebral and spinal scleroses, amputation-neuritis, herpes zoster.

Finally, a number of affections follow in the wake of infectious processes, but these are hardly to be considered as indicating the action of specific viruses. Among these are the constitutional neuroses and psychoses; the adynamic cerebral affections; the results of edema or of arterio-sclerosis; various forms of sclerosis of the spinal cord, to which the nervous system is always prone, and which any one of various poisons will help to bring about; subacute forms of multiple neuritis of the ordinary type, such as arise from manifold causes.

A disease may be suspected to be of infectious origin when bacteria are found in the tissues; when the outbreaks occur in epidemics, or are related to season or locality; when it exhibits vascular and histologic changes characteristic of the infection; or specific toxicity of the blood and urine; or if it has become much less frequent since the introduction of antiseptics. The discovery of bacteria is by no means conclusive, as they are often only incidentally present. A disease should be suspected of not standing in a very close relation to infection if it is of a kind developing under other influences, and it is therefore important to study what are the morbid conditions which occur most easily as a consequence of various general strains, and as a result of heredity. The French school has done much in this direction. The arguments are strong in favor of the infectious origin of the different forms of acute (often hemorrhagic) myelo-neuritis or poly-myositis (including beri-beri, the epidemic disease of Northern fishermen, Landry's disease, and poliomyelitis). It can at least be said that they are due to some poison acting powerfully for short periods, and in the manner characteristic of bacterial toxins. Bacteria have been found in Landry's disease, but they are not yet accepted as specific. Chorea is probably of infectious origin (Pianese, Dana,

Berkley); bacteria have been found which may or may not be specific. Myelitis (acute focal or transverse) may be produced experimentally by injection of cultures. It also may follow gonorrhea, and may occur in a manner suggestive of other infectious causes. Amputation-neuritis is said to have become less common since the introduction of improved methods of asepsis. There is little to be said for the infectious origin of zoster.

The nervous affections that attend the infective diseases of known character are mainly the following: Acute multiple neuritis may follow almost any one of the infectious processes, but it is difficult to say just what relation it bears to them. The lesions observed have more of the vascular and interstitial character than is ordinarily met with in neuritis of inorganic origin; but they are, doubtless, often due to the products of metabolism. Sometimes, as in diphtheria of rapidly fatal course, no obvious lesions are produced, but modern research is continually widening our resources in this direction. The meningitis which follows the exanthemata is probably due to secondary infection. It cannot, however, be affirmed that the absence of bacteria indicates the absence of a specific local action. In diphtheria and other affections, the virus seems to be almost the equivalent of the organism in its power of exciting local reaction. The meningitis which complicates typhoid fever, pneumonia, perhaps influenza, is generally due to the primary infection, at least in part. Epidemic cerebro-spinal meningitis and sporadic forms are generally due to the diplococcus lanceolatus, the same germ which causes pneumonia; sometimes, also, to other organisms. Recent research has accentuated the importance of purulent and even simple catarrhal affections of the naso-pharynx and the ear as starting-points for meningeal affections. The specific organisms, liable under favorable conditions to cause meningitis, are often present in even the healthy pharynx.

Sometimes the infective agent seems to gain entrance through the intestinal tract.

If we exclude from consideration the cerebro-spinal membranes, which are a great breeding-place for many bacteria, we may say that the instances of local bacterial action upon the nervous system are few, while on the other hand the nervous system is especially prone to suffer from toxic agents circulating in the blood. These poisons are sometimes separable into several definite constituents, which vary as regards their volatility, their solubility in alcohol, their physiologic action. Several of them have a strong tendency to attack the vasomotor system in various ways, and the disturbance of the circulation thus produced is liable to prevent the normal vascular dilatation which is so necessary for the protection of the body against the invasion of pathogenic organisms. These poisons affect the nervous system in various characteristic ways, though it is not improbable that they are capable of acting as universal neurotic poisons. In tetanus the irritability of the spinal cord is heightened, as in strychnin-poisoning; in diphtheria the cardiac centers are sometimes profoundly involved, though gross lesions may be absent; in influenza the tendency of the poison is toward the brain more than in the case of some of the analogous diseases. Besides the psychoses, which are common, acute hemorrhagic encephalitis occurs.

As regards chronic poisoning and its results, we find disseminated sclerosis after various acute infectious diseases, and especially after malaria, but it is not probable that the lesions are due to the action of the specific virus of this antecedent malady.

The causes that contribute to increase the liability of the nervous system to suffer from the effects of infectious disease may be divided into (*a*) those that increase the liability to invasion of the body by pathogenic organisms; (*b*) those that lower the resistance of the nervous system.

In the latter class are hereditary weaknesses in special directions, the presence of other poisons in the nervous system, the effects of trauma, a poorly acting vasomotor system.

Debility of the nervous system may contribute to increase the liability of the body to invasion by impairing the vitality of the tissues, which should resist the germs of disease, besides impairing the efficiency of the vasomotor mechanism.

The most important lines of research for the future are in the direction of classifying the special liabilities on the part of the nervous system to disease, independently of infectious causes, the refinement of our methods of histologic research, the more widespread and thorough study of bacteriology, and of the means of determining the toxic condition of the blood and urine.

DR. CHARLES K. MILLS, of Philadelphia, read a paper entitled "Relation of Infectious Processes to Mental Disease," presenting the following conclusions:

Specific infection must be included among the causes of the mental symptoms, or disease which precedes, accompanies, or follows febrile and other infectious disorders.

Much negative evidence can be adduced to show that acute delirium or acute mania is due to toxemia. Such evidence is afforded by autopsies which reveal neither gross nor histologic lesions; in these cases the toxemia probably overwhelms the patient before the production of meningitis or other diseases with recognizable structural lesions.

Analogies with nervous affections that are known or believed to be of microbic origin, such as multiple neuritis, myelitis, and chorea, favor the view that insanities with similar or related phenomena and lesions are also microbic in origin.

The evidence afforded by careful bacteriologic investigation of cases of acute insanity is thus far more meager and shows that various microörganisms may induce the same or similar types of mental disease.

The mental disorders of pregnancy and the puerperal state are in a considerable proportion of cases toxemic, without reference primarily to childbirth, but it cannot be regarded as proved that a bacillus of either eclampsia or puerperal mania is the sole cause of one or the other of these affections.

DR. FRANCIS X. DERCUM, of Philadelphia, read a paper entitled "The Therapeutics of Infectious Processes of the Nervous System." He contended that a consideration of the treatment of infectious nervous processes involves not only the treatment after infection but also its prevention. From much that we know, we have reason to believe that the occurrence of infection is markedly influenced by the nervous system. The ability

to resist infection depends largely upon the maintenance of normal nervous tone. We have also learned that the nerve-cells undergo certain changes in the course of their functional activity, and these changes can only be interpreted as those of fatigue. The first problem is the prevention of undue waste of nervous substance from undue or excessive fatigue. The necessity for proper proportion of sleep and exercise and suitable food must be borne in mind as an important element in prophylaxis. The question arises:

Are there any means of special prophylaxis against this or that infectious disease? Here the answer is uncertain. The preventive inoculations of Pasteur, Behring, Tizzoni and Cattani suggest themselves, but at the same time doubts as to the advisability and the applicability of the methods arise.

Again, is there anything that can be done in the various infectious fevers, in general pyemia, to prevent nervous infection? When the nervous system is threatened by the existence in other structures of foci of infection, the indication to remove these sources of infection is clear.

In regard to treatment the general indication is to arrest or limit the infectious process and to bring about elimination of the morbid products. To meet the first indication is not as yet possible; but the field of chemistry, and of the biologic laboratory, may in the future yield great discoveries.

The attempt to combat infectious microbes by means of the toxins which they produce was then considered; but with the possible exception of tuberculosis and lepra, the symptoms produced by infectious microörganisms appear to be due not so much to the germ as to these very toxins.

With regard to tuberculosis of the nervous system, the use of the lymph of Koch has been shown to be not only useless but dangerous.

In the treatment of leprosy by the use of lymph, the failure appears to have been almost equally marked.

With regard to hydrophobia, the literature was reviewed at length, and the conclusion reached that it is vain to deny the truth of Pasteur's experimental researches on animals, while the evidence as regards human beings in specific instances is strong and convincing.

In reference to tetanus the condition is still more interesting. A full review of the literature of the subject was given, including the collected reports of thirty-four cases treated either by the powder of Tizzoni or by serum. Of these, twenty cases were successful; but in some of these cases other measures, such as amputation or early active treatment of the wound, were employed. There is no contra-indication to the employment of these antitoxins, as they appear to be in no way injurious.

The other means at our disposal for combating the infectious nervous processes resolve themselves into general remedies, drugs and surgical procedures. Cold has been applied with varying success. It is not improbable that baths of suitable temperature might prove of service in the treatment of infectious nervous diseases. Whether or not by this means the elimination of toxins would be favored is a matter that at present can only be conjectured.

With regard to drugs we meet little that is encouraging or gratifying. In leprosy especially much has been claimed for gurjun, oil of chaulmoogra. In chorea, which is probably infectious, Dr. H. C. Wood has proposed quinin as of considerable value. Antipyrin also has its advocates.

Surgical procedures enable us occasionally to accomplish definite and often brilliant results. This is especially true with regard to the evacuation of pus in positions formerly considered inaccessible, as in brain-abscess.

In conclusion a suggestion was offered in regard to the treatment of tetanus which it was thought might prove of value. It has been observed that the bacillus of tetanus while growing in thymus-infusion did not develop spores, and that animals injected with such cultures were highly immune to the cultures of tetanus-bacilli grown in other media. If thymus-juice possesses such remarkable properties, it should be tested with a view to its possible therapeutic effect. Its administration in a case of tetanus beneath the skin could certainly do no harm, and might do good, and it might also be administered by the mouth. If successful it would prove far more valuable than the antitoxin, because so readily procured.

This completed the scientific work of the Congress.

The President, Dr. Alfred L. Loomis, in adjourning the Congress, congratulated the members on the fact that the registration had been larger at this than at any other of the previous meetings. The attendance at the sessions of the various constituent Associations had also been larger, and the work of a high degree of merit. There had been a united feeling and action among the different Societies in support of the Congress, and the different Associations had become more closely united than ever before. He considered the Congress to be one of the most important medical bodies in this country, as it brings together skilled workers in all the departments of medicine and surgery, and encourages unity of thought and action among medical men. If there is one body more than another in this country that is to raise our profession from the position which it has occupied so long, it is such a body as the Congress.

AMERICAN SURGICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Washington, D. C., May 29, 30, and 31, and June 1, 1894.

(Continued from p. 617.)

THIRD DAY—MAY 31ST.

AT the Executive Session the following officers were elected:

President, Dr. F. S. Dennis, of New York. *Vice-Presidents*, Dr. J. R. Weist, of Richmond, Ind.; Dr. J. B. Roberts, of Philadelphia. *Secretary*, Dr. M. H. Richardson, of Boston. *Treasurer*, Dr. N. P. Dandridge, of Cincinnati. *Recorder*, Dr. De Forest Willard, of Philadelphia. *Member of Council*, Dr. T. F. Prewitt, of St. Louis.

The next meeting is to be held in New York City. Dr. Dudley P. Allen, of Cleveland, Ohio, was elected to membership.

The following were elected to Honorary Membership: Sir Spencer Wells, F.R.C.S., London, Eng.; Dr. William Macewen, Glasgow, Scotland; Dr. M. H. E. W. Schede, Hamburg, Germany; Prof. Ernst v. Bergmann, Berlin, Germany; Prof. Karl Thiersch, Leipzig, Germany;

Prof. Theodor Kocher, Berne, Switzerland; Prof. Jules E. Péan, Paris, France.

The discussion of the papers on "Renal and Ureteral Surgery," read on the preceding day, was now taken up.

DR. M. H. RICHARDSON, of Boston, emphasized the importance of examination of the urine prior to all operations. In regard to the method of performing nephrectomy, he dwelt upon the abdominal method, the incision being made in front laterally. This enables the operator to control bleeding, which is the chief source of danger in the operation. By this method the surgeon is able to determine the presence or absence of the other kidney. Dr. Richardson expressed the belief that by this method the mortality of nephrectomy would be greatly reduced, by so providing for hemorrhage that it could not be an element in the mortality.

DR. H. H. MUDD, of St. Louis, agreed with Dr. Tiffany that in traumatic lesions of the kidney, even gunshot and stab wounds, it is not always necessary to do nephrectomy. He had seen such cases recover. He had also met with a number of cases of extensive laceration of the kidney from contusion, in which there was no external evidence of such injury. In many of these cases recovery takes place without operation. When operation was needed, Dr. Mudd believed that partial nephrectomy was justifiable. If necessary, a secondary operation can be done. The removal at a primary operation of kidneys so injured is likely to be disastrous. In pyelo-nephritis and renal lithotomy the first operation should be tentative, consisting of incision and evacuation, the kidney being allowed to remain; a secondary operation being performed if necessary.

Dr. Mudd did not favor the abdominal incision for the removal of the kidney, on account of the risk of infecting the abdominal cavity in suppurative conditions of the kidney, and because the lumbar incision is usually sufficient and, if necessary, it can be extended and the abdomen opened.

DR. T. F. PREWITT, of St. Louis, related several cases of renal stone, laceration, etc., coming under his observation. One of these was in a man who had passed scales of stone by the urethra and in whom operation showed a stone in the pelvis of the kidney, with several small detached particles. Dr. Prewitt was unable to offer an explanation of this separation. With regard to diagnosis, he held that a large amount of pus with a small amount of mucus in the urine indicated that the trouble was in the kidney rather than in the bladder.

DR. W. S. FORBES, of Philadelphia, called attention to the tolerance of the kidney to the presence of stone. He related a case in which the autopsy revealed the presence of a stone in the pelvis of the kidney, and in which, during life, there were no indications of stone. The character of the stone was peculiar in that it was what is known as an indigo stone.

DR. CHARLES B. NANCREDE, of Ann Arbor, said that he had used the abdominal method of nephrectomy in four cases, but he did not favor it in suppurative conditions of the kidney. In order to avoid hemorrhage he had used an elastic ligature, gradually slipping it down and removing the kidney piecemeal until the pedicle is reached. In the treatment of the suppression of urine that may follow these operations, he recommended the use of nitroglycerin, which he had used with advantage.

DR. JOHN B. DEAVER, of Philadelphia, added his testimony in favor of the anterior incision in nephrectomy. He felt certain that with proper precautions the danger of infection of the peritoneal cavity could be avoided.

DR. STEPHEN H. WEEKS, of Portland, Me., reported the case of a man who developed an abscess in the groin after having had symptoms of renal colic some months before. On opening this abscess pus was discharged, and subsequently a small calculus was passed. No urine was discharged through the abscess at any time. The sinus has since almost healed.

DR. WILLIAM H. CARMALT, of New Haven, Conn., reported the case of a woman in which it was thought that nephrectomy might be required. On preliminary examination through an abdominal incision only one kidney could be discovered. The patient died three years later, and the autopsy showed that the second kidney was located in the pelvis.

DR. WILLIAM B. COLEY, of New York, read a paper entitled "The Treatment of Malignant Disease with the Toxins of Erysipelas." He related that in a previous paper he had reported ten cases treated by the injection of living cultures of erysipelas. The first case was one of inoperable, recurrent sarcoma of the tonsil. The injections were continued for some time without causing an attack of erysipelas, but finally a culture from a virulent case was used and reproduced the disease. The tumor ceased to enlarge, the general condition improved, and the patient is still living, three years after the beginning of the treatment.

Six of the ten cases presented sarcoma and four carcinoma. In only four was erysipelas produced. Those cases in which the disease was not induced seemed to be as much benefited as those in which it was, and this led to a trial of the toxic products instead of the living cultures. A combination of the toxin of the bacillus prodigiosus with that of the streptococcus of erysipelas was also employed and found to be more satisfactory than that of the latter alone. Since December, 1892, Dr. Coley has treated thirty-five cases of inoperable malignant disease by the injection of the toxins of these two organisms. Twenty-five were cases of sarcoma, seven of carcinoma, and three either sarcoma or carcinoma. Among the cases reported were the following: A case of sarcoma of the abdomen and pelvis, followed by recovery; a case of recurrent sarcoma of the back and groin, with entire disappearance of the tumor, and no recurrence fourteen months after cessation of the treatment; sarcoma of the iliac fossa, with partial disappearance of the tumor—the health of the patient being perfect; inoperable sarcoma of the abdominal wall, with entire disappearance under treatment; sarcoma of the leg recurring after amputation, with enlargement of the glands of the groin, with marked improvement, but still under treatment; enormous round-celled sarcoma of the neck and thyroid, with marked improvement; large, pulsating round-celled sarcoma of the ileum and buttock, with marked diminution in size.

In the eight cases of carcinoma treated there has been marked improvement in two, slight improvement in four, and no effect in two. In no case has the tumor disappeared.

Of the total number of cases treated there is reason to hope for a permanent cure in five. Nine cases showed

marked improvement, eight showed only slight and temporary improvement, while in two there was no apparent effect. One of these latter cases was an osteo-sarcoma of the sternum, in which only four injections had been given; the other was a sarcoma recurring after removal, and in which, owing to the condition of the patient, only small doses could be employed. The spindle-celled and mixed-celled sarcomata seemed to be the most susceptible to the action of the toxins, and periosteal sarcomata and osteo-sarcomata less susceptible.

An important element in the success is the character of the culture employed. Cultures from any but virulent cases have had but little effect. With regard to the manner in which the treatment acts, Dr. Coley was inclined to base the explanation on an acceptance of the micro-parasitic origin of malignant disease. It is only in this way that the effect of this mode of treatment can be explained.

The following conclusions were presented: 1. The curative action of erysipelas upon malignant tumors is an established fact. 2. This action is much more powerful in sarcoma than in carcinoma. 3. It is chiefly due to the toxin of the streptococcus of erysipelas, which may be isolated and used with safety. 4. It is greatly increased by the addition of the toxin of the bacillus prodigiosus. 5. To be of value the toxin should be obtained from virulent cultures and should be freshly prepared. 6. The results obtained from the use of toxins, without danger, are so nearly, if not quite, identical with those obtained from an attack of erysipelas that inoculation should never be resorted to.

Dr. Lewis S. Pilcher, of Brooklyn, read a paper entitled "Venous Tumor of the Diploë." The case reported differed from others which had been described in that the tumor did not communicate with the longitudinal sinus, but was essentially a large venous cavern into which numerous diploic veins opened. The patient was a girl, fifteen years old, who at the age of five years fell and struck the top of her head. Within a few days a small, soft swelling was noticed at the site of injury, without pain or tenderness, but gradually increasing in size. At the end of five years the swelling was incised and a small quantity of clotted blood evacuated, but the sac immediately refilled. It was repeatedly opened, with the same result. When the girl came under observation she presented a prominent tumor over the site of the anterior fontanel, about two and a half inches in its largest diameter. Over the convexity of this mass the skin was thin and without hair. In the right anterior quadrant of the base an elevated plate of bone could be felt. The tumor was soft and could be diminished very slightly in size. It was gradually enlarging. An operation for the relief of this condition was undertaken. It was found that in the anterior part of the base of the swelling the cranial bone was wanting and over a space of 2½ by 1½ cm. the dura mater was exposed. Certain venous channels of the diploë were seen to be opened and from these free bleeding took place. The overhanging edge of bone was cut away with bone-forceps, the base of the cavity was well curetted, and the cavity was packed with iodoform-gauze, and as far as possible the wound was sutured. The after-course of the case was uncomplicated.

Dr. J. W. Elliott, of Boston, read a paper entitled "Strangulation of Meckel's Diverticulum caused by Volvulus of the Ileum." He detailed the case of a man, thirty years old, who came under observation after having been sick for four days with vomiting, chills, and abdominal pain. The bowels had moved twice in the preceding forty-eight hours. The temperature was 103.6°, the pulse 160, the respiration 35. Under ether, a large, hard mass was felt in the middle of the abdomen. The case was regarded as one of appendicitis.

The abdomen was opened by a vertical incision two inches inside of the anterior superior iliac spine. A quantity of turbid fluid escaped. The appendix was found to be normal. The incision was extended, and the mass exposed. It sprang from the lower part of the convex surface of the ileum, and was tightly twisted at its point of attachment. Separating the adhesions, it was found to be attached to the under surface of the umbilicus, and it was then evident that it was Meckel's diverticulum in a strangulated and gangrenous condition. It was seven inches long and about the size of the ileum. The diverticulum was removed and the opening in the ileum closed. The ileum in this position was found twisted on itself, but the gut was not competely obstructed. This twist was evidently due to old adhesions extending into the mesentery. The patient, already septic at the time of operation, died of septic peritonitis on the second day.

Meckel's diverticulum is due to the persistence or incomplete obliteration of the vitelline duct. It is usually small, and has its principal interest in the fact that it not infrequently acts as a band, and causes intestinal obstruction. It may be the seat of retention-cysts, which may or may not communicate with the intestine. A cyst of this kind has been reported, of which the pedicle had become strangulated, causing gangrene of the mucous membrane, and setting up acute peritonitis. These two cases establish the fact that strangulation of Meckel's diverticulum is one of the causes of acute peritonitis. The diverticulum resembles the vermiform appendix, and the lesions of the two may easily be confounded clinically. A case of peritonitis following perforation of the diverticulum has been reported.

The symptoms of inflammation of the appendix and those of inflammation of Meckel's diverticulum are the same. In differential diagnosis the history of a discharge from the umbilicus would suggest the presence of a diverticulum, while a history of previous attacks of pain would be significant of either an inflamed appendix or an inflamed diverticulum. The presence of a tumor, or tenderness near the umbilicus, should favor the theory of an inflamed diverticulum. In the case here reported, the tumor was below and slightly to the right of the umbilicus.

The only treatment in such a case is prompt celiotomy, the pedicle being carefully stitched, as it often opens directly into the intestinal canal. The vessels should be carefully ligated, because the diverticulum is supplied by a branch of the mesenteric artery.

Fourth Day—June 1st.

Dr. J. McFadden Gaston, of Atlanta, read a paper on "Mooted Points as to Fractures of the Arm, with Notice of an Improved Splint," which is to appear in a future number of The News.

DR. W. S. FORBES, of Philadelphia, presented a communication entitled "The Removal of Stone in the Bladder; with the Presentation of a New Lithotrite." This also is to appear in a future number of THE NEWS.

DR. WILLIAM H. CARMALT, of New Haven, Conn., read a paper on "Extirpation of the Larynx." He reported a case in which extirpation of the larynx was done in such a way as to permanently close the opening into the mouth, so that there should be no communication with the lungs.

A man, forty-four years old, came under observation with severe attacks of dyspnea due to the presence of an ulcerated nodule in the larynx, which had been first discovered two years before. The dyspnea necessitated the performance of tracheotomy. The larynx was extirpated, the upper portion of the esophagus being stitched to the epiglottis. The man was able to swallow fluids on the second day, and made an uneventful recovery. He is now able to speak in a whispered voice.

DR JARVIS S. WIGHT, of Brooklyn, exhibited a number of instruments, including needle-forceps, self-threading needle, aneurism needle-forceps, and a new form of knife provided with a beak substituting the use of a grooved director.

The following papers were read by title: "The Effect of Erysipelatous Attacks on Tuberculosis," by DR. DE FOREST WILLARD, of Philadelphia; "Hernia," by DR. W. T. BULL, of New York; "Cases of Extra-uterine Pregnancy, with Remarks," by DR. M. H. RICHARDSON, of Boston; "Treatment of Urethral Vegetations by a Circular-cutting Curet," by DR. JOHN B. DEAVER, of Philadelphia; "Report of Surgical Cases," by DR. CHARLES B. PORTER, of Boston.

ASSOCIATION OF AMERICAN PHYSICIANS.

Ninth Annual Meeting, held at Washington, D. C., May 29, 30, 31, and June 1, 1894.

(Continued from page 619.)

THIRD DAY—MAY 31ST.

DR. J. P. CROZER GRIFFITH, of Philadelphia, presented a paper on "Tetany in America." This disease, although common enough in Europe, is rare in this country. Several varieties of the disease have been described, as the chronic, the rheumatic, etc., but there are no well-defined lines of demarcation between these forms. The disease is characterized by tonic spasms, either continuous or paroxysmal, and usually symmetric, not accompanied by unconsciousness, and not dependent upon lesions of the cord or of the nerves, nor upon hysteria. Dr. Griffith reported a series of cases occurring in his own practice. Although cases have been recognized, the disease is exceedingly rare, at least in this country. Carpo-pedal spasm is a mild form of tetany. Dr. Griffith has been able to collect from the literature 72 cases of the disease. The occurrence of carpo-pedal spasm in association with laryngismus stridulus is very infrequent. Of the 72 cases collected, 34 were at the age of puberty, or older; 13 between puberty and two years of age; 25 under two years of age, and 20 of these less than one year of age. Pain in the affected parts, apparently due to the spasm, was present in 21 cases only. There were 17 cases of laryngismus stridulus. The chief remedies for the condition are the nerve-sedatives. But few cases have proved fatal, and death, when it occurred, was due to complications.

DR. W. GILMAN THOMPSON, of New York, reported a case of tetany occurring in a man thirty-five years old.

DR. STOCKTON, of Buffalo, reported a case with a somewhat obscure etiology, occurring in a child four years of age. The child presented carpo-pedal spasm, with some suppression of urine, which at the time was thought to be probably due to fibro-cystic degeneration of the kidney. The child made a good recovery, although still delicate. The kidney-disturbance was probably functional.

DR. ABRAHAM JACOBI, of New York, regarded laryngismus stridulus as of a quite frequent occurrence, and thought that the paucity of reports is due to the great frequency rather than to the great rarity of the disease. He regarded rachitis as probably the cause of the disorder.

DR. WILLIAM OSLER, of Baltimore, reported the case of a woman in which the disease recurred during six successive pregnancies.

DR. WHARTON SINKLER, of Philadelphia, read a paper on "Lead-palsy in Children." He stated that this condition is rare in young children, for the reason that they possess more active powers of elimination. The symptoms are both motor and sensory. The paroxysm in a child is as likely to affect the lower extremities as the upper. He reported eight cases gathered from the literature, and three cases occurring in his own practice. The pathology of lead-poisoning in children is generally thought to consist in alterations in the nerves. It is probable, however, that in many cases the symptoms are due to the direct action of the poison upon the muscles; in the chronic cases they may result from alterations in the horns of the cord.

DR. C. P. PUTNAM, of Boston, agreed with Dr. Sinkler in the statement that the legs are affected in children as well as the arms. He thought that the more marked involvement of the arms in adults is due to the greater use of those parts; in children the legs are used largely, and hence, probably, the greater frequency of leg-palsy in them.

DR. ABRAHAM JACOBI, of New York, has had two cases, in each of which the legs were involved as well as the arms.

DR. CHARLES L. DANA, of New York, read a paper entitled "A Study of the Temperature in Cerebral Apoplexy." Within the term apoplexy he included all cases of intra-cranial hemorrhage and all cases of softening due to embolism and thrombosis. As to the direct effect of an apoplexy upon the general bodily temperature there is on the first day a rise of from 1° to 2°, as shown by the rectum. In acute softening from embolism or thrombosis there is rarely any disturbance of temperature on the first day. Hence any elevation of temperature occurring on the first or second day of an apoplexy indicates cerebral hemorrhage. The fever is slight, the temperature reaching from 101° to 103°. In those cases in which there is a terminal rise to 106° or 107° a pneumonia, perhaps a gangrenous pneumonia, is probably the cause. Unilateral disturbances of temperature after an apoplectic stroke have been noted. In seven cases of acute cerebral softening and in three of cerebral

hemorrhage, in all of which autopsies were made, it was found that in the grave massive hemorrhages the affected side showed a higher temperature than the well side; in the cases of acute softening there was no difference of temperature noted. The sudden tearing of the brain by the hemorrhage causes more disturbance than the gradual process of softening. A preliminary fall of temperature in apoplexy is exceedingly rare. This may be explained by the fact that most of the cases are seen some hours after the event has occurred. The effect of the special localization of the clots or the softened areas upon the temperature-changes is interesting; and this brings up the question of the position of the thermic centers. Authorities differ in their belief as to the exact location of these thermic centers. The studies and researches of physiologists lead to the conclusion that injuries of the corpus striatum and pons cause a rise of temperature, while injuries of the cerebellum and white matter of the cerebrum do not cause such an elevation. Dr. Dana, however, doubted the accuracy of these results. He called attention to the fact that after linear craniectomy the temperature frequently shoots up to a high point, and this elevation is due probably to cortical injury. Also cases of injury of the corpus striatum have been followed by no rise of temperature. He believed that it cannot definitely be stated that the thermic centers are present in the brain, but it can be said that the temperature is likely to rise after lesions of the pons and after tearing wounds of the cortex of the brain. He urged the great value of further studies of temperature-changes following apoplectic seizures.

Dr. John H. Musser, of Philadelphia, read a paper on "The Mild Character and Diminished Prevalence of Syphilis and the Infrequency of Visceral Syphilis." He spoke of the difficulty of securing accurate statistics on such a subject. The most reliable sources of such statistics are the Army and Navy records of a large hospital. He believed that there is less syphilis in his own community at present than there was ten years ago. The cause of the diminished prevalence can only be a matter of speculation. The increase in the habits of cleanliness and the improvement in the methods of treatment of the infectious period of the disease are probably factors. The decline in the tertiary manifestations, while small, is still to be noted. Visceral syphilis is quite infrequent now as compared with the past.

Dr. Janeway, of New York, thought it would be a mistake to overlook syphilis as a preëminent factor in the production of disease. He finds it a frequent etiologic factor in the production of locomotor ataxia and in general paresis. It is also a strong etiologic factor in the development of aneurism.

Dr. H. M. Lyman, of Chicago, said that the tendency of syphilis is toward a diminution in the virulence of the primary and secondary manifestations rather than of the tertiary manifestations. A proof of the tendency of the disease to die out is shown by the history of the Pacific Islanders. A century ago, when first discovered, they were entirely free from syphilis, and yet they were undoubtedly direct descendants of the Asiatics, among whom the disease has ever been prevalent.

Dr. Frederick C. Shattuck, of Boston, read a paper entitled "The Frequency of Renal Disease as Shown by Albumin and Casts, especially in those past Middle Life." He stated that the chemic preceded the microscopic examination of the urine. The presence of casts in the urine always shows an involvement of the renal tissue. He did not propose to enter into the question as to whether or not albuminuria is physiologic, as would seem to be indicated by its great frequency. He considered the heat-test the most delicate of all tests for albumin. He has for a number of years been in the habit of examining the urine of patients, no matter what the disease for which they came. Excluding all cases of fever and those in which bile and sugar are present, or in which there is sufficient blood or pus to account for the albumin, as well as all cases of unquestionable nephritis, Dr. Shattuck stated that as a result of his studies he is not disturbed by the presence of albumin and casts in the urine of patients under fifty years of age as much as he was formerly. He was inclined to believe that renal albuminuria, while undoubtedly pathologic, is not of any more significance than a chronic pharyngitis. The frequency of albuminuria increases with advancing age.

Dr. T. M. Prudden, of New York, read a paper on "Experimental Phthisis in the Rabbit with Formation of Cavities." He stated that he believed that secondary infection of the lung by the streptococcus pyogenes after primary infection by the tubercle-bacillus has a decided effect in the production of the symptoms of pulmonary tuberculosis. He introduced into the lungs of rabbits already affected with tuberculosis cultures of the streptococcus pyogenes, and in a large number of such cases of mixed infection cavities formed in the lungs. While not wishing to draw any practical conclusions from his investigations, he laid stress upon the fact that it is possible to produce artificially, in the way indicated, cavities in the lungs of tuberculous animals.

In the absence of Dr. E. L. Trudeau, of Saranac Lake, his paper, entitled "A Report of the Ultimate Results Observed on Experimental Eye-tuberculosis by Tuberculin-treatment and Preventive Inoculation," was read by Dr. Loomis, of New York. It was pointed out that the tendency to relapse in the eye-condition after treatment with tuberculin is much less than before such treatment. The action of the injection of tuberculin is believed to be the same in effect as that of celiotomy upon tuberculous peritonitis. After the operation such reactive inflammation is set up as to overcome the original tuberculous inflammation. A relative degree of immunity may be secured in this way. The tuberculous process produced in the eye of an animal previously subjected to this protective treatment runs a course different from that produced in animals not so immunized, and may go on to an absolute cure.

"Cough Induced by Posture as a Symptom Nearly Diagnostic of Phthisis" was the title of a paper read by Dr. Norman Bridge. He dwelt on the fact that in pulmonary tuberculosis change in posture has a decided effect in increasing or decreasing the tendency to cough. Some patients may rest in comfort on one side and suffer greatly when lying upon the other side. As soon as the whole lung of one side is involved, resting on that side is attended with comfort. It was thought probable that a study of this subject may be of service in diagnosticating the situation and extent of a pulmonary tuberculosis.

FOURTH DAY—JUNE 1ST.

DR. VICTOR C. VAUGHAN, of Ann Arbor, presented a paper entitled "The Chemical Products of the Anaërobic Putrefaction of Pancreatic and Hepatic Tissues, and their Effects upon the Tests for Morphin." He stated that the products of putrefaction vary as the process takes place under aërobic or anaërobic conditions. Owing to lack of caution in this regard, the tests of Dragendorff are probably more or less inaccurate. Indol and skatol may yield the same chemic reactions as morphin, and responding thus to the same tests may give rise to errors in the conclusions in toxicologic investigations. Indol and skatol, and their derivatives, must, therefore, be excluded in all such investigations.

DR. H. M. LYMAN, of Chicago, read a paper on "Gastro-enteric Rheumatism." He said that rheumatic dyspepsia is just as much a nervous manifestation of gastric disease as rheumatic tonsillitis is a neurotic manifestation in the throat. Both are localizations of the rheumatic diathesis. Gastro-enteric rheumatism is a disease of advanced life. At times obesity, diabetes, and polyuria are associated with it. Some of the patients have had rheumatism in early life. It is a rheumatic affection of the nerves of the alimentary canal. The patients suffer some hours after meals, or when the stomach is empty. The pain is referred to the epigastrium or hypochondrium. At times pain is felt in the cardiac region. The character of the pain is very peculiar. It may be accompanied with tenderness in the epigastrium when pressure is exerted. Its intensity is not usually very great, though at times it may become so. It is a dull, persistent, widely-distributed distress. It is readily distinguished by the sufferer from pains having their origin in the abdominal walls. The disease shows a marked tendency to alternations with neuralgias elsewhere over the body; thus facial or brachial neuralgia and insomnia may be accompaniments. At times the pelvic nerves are affected, and the patient then suffers from rectal or vesical tenesmus. Nocturnal erections may occur. The attacks are more marked and more frequent during the wet seasons of the year. In the intervals between the paroxysms there may be perfect bodily comfort. At first the general health is not affected, but in course of time exhaustion and neurasthenia supervene, together with anemia, cachexia, and hypochondriasis. The disease must be distinguished from abdominal gout, peritonitis, abdominal rheumatism, chronic catarrhal gastritis, chronic hepatitis, chronic pancreatitis, carcinoma of the stomach and liver, ulcer of the stomach, and other abdominal conditions. The pathology of the disease is as unsatisfactory as that of rheumatism in general. It is probably to be found in a toxemia resulting from retarded oxidation accompanying certain conditions. Free perspiration will afford great relief, thus going to prove the existence of a toxic condition. In rheumatic gastritis the gastric juice contains a great excess of free hydrochloric acid, in contradistinction to the condition noted in gastric carcinoma. This is analogous to the presence in the muscles of free sarcolactic acid during an attack of ordinary muscular rheumatism. The treatment of rheumatic gastritis does not differ in any respect from that of other varieties of neuro-rheumatism. If the distress follows three or four hours after meals, a crust of bread, or a glass of water or milk, may arrest the painful sensation. The danger, however, is that dilatation of the stomach may result from such a course. Sodium salicylate, ten grains every three hours, is valuable in alleviating the condition. Salol also is of great benefit in the treatment. Chief among the remedies is olive-oil, which not only relieves the pain, but also controls the constipation that usually coëxists. Alteratives, such as mercury in small doses, potassium iodid, and tonics, are of service. Occasional mercurial purges should not be neglected, and occasional flushing of the bowels is very valuable. The diet must be regulated, and should be entirely vegetable if the patient is of plethoric habit. Mineral waters are of service. This regimen must, however, not be adhered to too rigidly. In elderly people slight alcoholic stimulation may be of service. Frequent warm baths are exceedingly grateful, especially when associated with massage. Mental and physical fatigue must be avoided.

DR. JOHN H. MUSSER, of Philadelphia, decried the multiplication of terms. He regarded this condition as a gastro-enteric form of lithemia, and this term, as indicating the general nature of the disease, should be employed in preference to gastro-enteric rheumatism.

DR. VICTOR C. VAUGHAN, of Ann Arbor, thought that there should be a discrimination made between pains due to the presence of an excess of uric acid and those due to other conditions. He would call the pain due to uric acid gouty. Gouty cases are to be recognized by an examination of the blood, with a determination of the number of polynuclear colorless cells present.

DR. DANA would restrict the term rheumatism to that particular class of cases in which there are articular manifestations, with a tendency to cardiac and pericardial complications, and would give new names to all of the other conditions resulting from the rheumatic diathesis.

DR. GEORGE DOCK, of Ann Arbor, reported a "Case of Osteomalacia." The disease occurred in a Pennsylvania woman, twenty-four years old, whose father probably had had syphilis, and her mother a large goiter, but otherwise was well. The patient married at seventeen, and gave birth to her first child two years later. Throughout the pregnancy she suffered from rheumatic pains. In the labor the placenta was adherent, and grave hemorrhage took place. Two years later a second child was born, and again the placenta was adherent and the hemorrhage alarming. The woman nursed both children. The second pregnancy was followed by a return of the rheumatic pains, and shortly after this softening of the bones began to be noticed. She had a fall some time later, fracturing her left thigh. There was a steady advance in the progress of the disease up to the time of her death, which resulted from some acute bronchial affection. Sexual desire was absolutely abolished, in contradistinction to the usual history of these cases. The urine never contained the slightest trace of lactic acid. Toward the close of life renal colic developed, and calculi and gravel were passed. The treatment consisted in the administration of a concentrated syrup of lime until the colic was increased. Phosphorus did no good at all on account of the gastric disturbance that it occasioned. The severe pain was controlled by the use of codein. At one time the patient was placed upon chloral, forty-five grains per diem, for one month, but

without any effect. After death all of the bones were found to be softened, with the exception of those of the head. The ribs could be cut through with a knife, as could also the bones of the pelvis. The superior outlet of the pelvis was of normal shape. The femora were composed of bony spicules imbedded in various kinds of bone-marrow. They also contained cysts at various points. The chief remedies in the disease are phosphorus in large doses, and castration. In this case castration was proposed, but declined.

The following papers were read by title: "A Case of Mitral Stenosis, with Great Hypertrophy of the Right Ventricle; Death from Hemoptysis," by Dr. A. McPhedran, of Toronto, and "A Case of Calculous Pyelitis, with Invasion by the Bacillus Lactis Aërogenes," by Dr. John H. Musser, of Philadelphia.

AMERICAN MEDICAL ASSOCIATION.

Forty-fifth Annual Meeting, held at San Francisco, Cal., June 5, 6, 7, and 8, 1894.

(By Telegraph.)

GENERAL SESSION.

FIRST DAY—JUNE 5TH.

The Forty-fifth Annual Meeting was called to order by President James F. Hibberd, of Richmond, Ind. There were present, besides, on the platform Dr. I. N. Love, of St. Louis, Second Vice-president; Dr. Wm. B. Atkinson, of Philadelphia, Permanent Secretary; Dr. H. B. Ellis, of Los Angeles, Assistant Secretary; Dr. J. L. Simmons, President of the California State Society; Dr. R. H. Plummer, Chairman of the Committee of Arrangements.

Prayer was offered by Rev. DR. ROBERT MCKENZIE.

In the absence of Governor Markham and Mayor Ellert, who were unavoidably detained, Supervisor J. G. JAMES extended a hearty welcome to the Association, with the freedom of the city.

DR. J. L. SIMMONS, of Sacramento, in behalf of the California Medical Society, also delivered an address of welcome.

DR. H. R. PLUMMER, Chairman of the Committee of Arrangements, announced instructions and information to delegates and visitors. He also presented to President Hibberd a gavel, whose handle was made of orange-wood, representing the State color, yellow, and the body of manzanita wood, which is peculiar to the Pacific slope; its sides were of gold, one inscribed A. M. A., S. F., 1894, and the other James F. Hibberd, President.

The physicians of Oregon, through the courtesy of Dr. W. G. Owens, sent one dozen gavels to be used in the various sections; the handles were of yew-wood, the body of myrtle. President James F. Hibberd prefaced an address (which will be found at p. 625 of this issue of THE NEWS) with the following remarks: "Some of the pleasantest surprises of my life are occurring at the close of my career. The sentiment which has prompted the gift of this gavel is more appreciated than the gift itself. I shall endeavor to use it discreetly and properly." On motion of DR. W. T. BISHOP, the address was referred to a committee of five for consideration. The committee was constituted by the appointment of I. N. Love, Acting President; Dr. W. T. Bishop, of Pennsylvania; Dr. Lyman Beecher Todd, of Kentucky; Dr. R. Beverly Cole, of San Francisco; Dr. Fred. W. Mann, of Michigan; Dr. J. P. Woodbridge, of Michigan.

DR. N. QUIMBY moved that a committee of five be appointed to especially consider the danger of reduction of the number of army surgeons. The committee was constituted of Dr. I. N. Quimby, of New Jersey; Dr. J. Copeland, of Alabama; Dr. J. B. Hamilton, of Illinois; Dr. E. E. Montgomery, of Pennsylvania; Dr. J. M. Duff, of Pittsburg.

On motion, Dr. Ed. C. Ingalls, of Chicago, was elected a member of the Association.

On motion, the delegates from the Pharmaceutical Association were also invited to take seats in the Convention.

Owing to the illness of the Treasurer, DR. R. J. DUNGLISON, the Treasurer's report was read by the Permanent Secretary.

DR. INGALLS presented the Treasurer's report in detail. It was indorsed by Dr. E. E. Montgomery and Dr. E. Fletcher Ingalls.

On motion of DR. HUME the report was received and filed.

The Secretary presented a report regarding the action of the various State Societies as to the revision of the Code. Twenty-one societies are opposed to the change. Nebraska, Vermont and Indiana are in favor of the change. Wisconsin and Florida laid the matter on the table. Three had not yet considered the question, and from eleven no reply had been received.

A brief recess was held, after which the election of the Nominating Committee was proceeded with.

The following resolution was offered by DR. L. D. BULKLEY:

WHEREAS, Each section should have three members on the Business Committee of the Association; and

WHEREAS a considerable number have signified their inability to be present this year;

Resolved, That the officers of the various sections be hereby instructed to appoint from the members in attendance alternates to act at this meeting for those who are unable to be present.

DR. R. J. DUNGLISON tendered his resignation as Treasurer.

The following resolution was offered:

WHEREAS, Dr. R. J. Dunglison has been for seventeen years a faithful, energetic Treasurer of this Association, without any compensation; therefore, be it

Resolved, That the hearty and unreserved thanks of this Association be cordially extended to him for his efficient and laborious duties on behalf of this Association, and a copy of this resolution be forwarded by the Secretary to Dr. Dunglison.

An amendment was offered by DR. MONTGOMERY to present to Dr. Dunglison $300 in appreciation of his services.

SECOND DAY—JUNE 6TH.

The Association was called to order by President Hibberd at noon.

The report of the Committee of Arrangements was presented.

The following resolution was offered by DR. QUIMBY, of New Jersey, and was adopted:

Resolved, That the American Medical Association urge upon Congress the advisability of preserving and promoting the efficiency of the Army Medical Department.

Resolved, That any reduction in the present membership of the Army Medical Department or of its appropriation would be prejudicial to the interests of the army and of the country; and be it further

Resolved, That the Secretary be instructed to thus inform Congress by telegraph.

The Address on Medicine was delivered by DR. C. H. HUGHES, of St. Louis, who chose for his subject "The Nervous System in Disease and the Practice of Medicine from a Neurological Standpoint." He said that in this age of preëminent progress in every department of human research the medical profession is to be congratulated on the onward march Medicine has made and is yet making toward the mitigation of human misery and the mastery of disease. As Hippocrates drove the devotees of superstition from the Temple of Hygeia, and taught the people that offended gods could neither bring, nor propitiated gods dispel, disease, and as Andreas Vesalius defied the popular prejudice and ecclesiastic power of his day, at the risk of his life, to make his first human dissection, so his professional descendants of today continue breaking down barriers of ignorance, of prejudice and superstition in the way of man's happiness and prosperity, unlocking the secrets of Nature's arcanum and setting the captive mind and organism free from the enthralment of disease. Substitutive inoculations, for establishing tolerance and immunity to other diseases, are spreading the rescuing power of the medical profession. Pulmonary tuberculosis, with its 165,000 annual victims in this country alone, will soon be a thing of the past, through wisely applied antisepsis. Electroscopic and other explorations now penetrate the dark and otherwise hidden places of the human body, making them a glow of light to the diagnostician. But little, if any, of the human anatomy is absolutely beyond reach of medical science or relief. The abdominal cavity is no longer a *terra incognita* to the resources of surgery, thanks to Lister, of Edinburgh; McDowell, of Kentucky; Battey, of Georgia; Lane, Gross, Agnew and others. The once-hidden recesses of the brain are now penetrated with impunity, saving lives and minds formerly doomed to destruction, thanks to Fritsch and Hitzig, of Germany; Ferrier and Horsley, of England, and Bartholow, of America, the last having been the first physician in the world to explore and prove the truth of cerebral localization by demonstrations on the living human brain.

Dr. Hughes then took up for consideration the complications of influenza, and more particularly the nervous and psychic aspects and sequelæ of the disease. The pneumonia of influenza, it was pointed out, is suggestive of that which results from section of the vagi, and may be ascribed to a toxic influence exerted upon the medullary centers. The therapeutic indications to be deduced from this conception of the disease are the enforcement of rest and the adoption of reconstructive measures. Chloral was recommended as the best antiseptic, hypnotic, and calmative, even in the delirious stage of the disease. In this condition ammonium bromid may be usefully added. For the pain the analgesics derived from coal-tar products and the sweat-producing opium-combinations were recommended, together with the elimination of all circulatory influences exerting a disturbing and depressing influence upon the nervous centers, *e.g.*, the rheumatic or the venereal poison.

Dyspepsia was next considered from the point of view of its cerebral origin. It was maintained that the disorder is more common in those who do intellectual work rather than in those that eat largely and indiscriminately. The relation was said to exist principally through the neural connections of the brain and the stomach. This is illustrated in the association of migraine and nausea and of gastric disturbances and vertigo.

The brain influences the stomach and the stomach influences the brain, but the power of the former over the latter is far greater than that of the latter over the former in chronic conditions.

In conceding this influence of the nervous system over the digestive processes, we need not ignore any fact of chemico-biologic research, or shut out any of the light thrown on the subject by the investigations elucidating the functions of the stomach.

The liver, the kidneys, the bladder, and the bowels, are similarly influenced by emotion, and the lymphatic system is likewise under nervous control, like the arterioles, by the vasomotors.

A center in the medulla also influences, through the chorda tympani nerve and probably the sympathetic, the salivary secretion. A center there also influences the action of the kidneys. The chorda tympani contains secretory and vaso-dilator fibers, the sympathetic, vaso-secretory and vaso-dilator. Salivary secretion is induced reflexly by mastication and the irritation of the presence of food in the mouth and stomach and by the vivid remembrance of certain foods whose eating has made an agreeable impression, and by emotion.

The vagus and the vasomotors influence, or govern, circulation, respiration, and digestion.

The dominion of the nervous system over the spleen is also conceded by the physiology of the day.

Physiologists now maintain that its metabolism is controlled directly by the nervous system.

Hysteria illustrates from the standpoint of clinical observation how suddenly and how extensively nearly all the organs of the body may be profoundly disordered in function by morbid impressions through the nervous system.

There is a suggestive practical lesson in this "neuromimesis," or mimic neurosis, as to the relation of the nervous system to diseases in general.

Dr. Hughes further dwelt upon the tropho-neuroses, the question of physiologic rhythm and its practical bearing upon the management and treatment of the sick, the importance of the early recognition of neurasthenia, the relations of neural overstrain to the development of carcinoma and pulmonary tuberculosis. He also considered the advances made in neuro-dermatology, the relation of certain affections of the heart to cerebral influence, the relation between hemophilia and the vasomotor system, the dependence of the bodily temperature and fever upon conditions of the nervous system, the relations between the nervous system and the liver. He referred to the possibility of leukemia being a neurotrophic blood-disease, and called attention to the fact that rattlesnake-poison first acts with deadly nervous

shock. Finally, attention was directed to the treatment of inebriety.

Dr. Didama, of New York, moved that a vote of thanks be extended to Dr. Hughes for his address. Carried.

A resolution was offered by Dr. Marcy, of Boston, recommending the appointment of State Examining Boards. Carried.

The report of the *Journal* was adopted as the sentiment of the American Medical Association.

Adjourned, to meet on Thursday, for special consideration of the Constitution and revision of the Code.

(To be concluded.)

NEWS ITEMS.

The Cholera in Europe.—It is reported by cable that cholera has broken out in Upper Silesia, Prussia, and also in the city of Stettin.

Despatches from the East Prussian frontier give alarming news of the spread of the disease. In Mislowitz the hospital has been filled with cholera-patients, and huts are building for those who cannot gain admission. At Schilno, near Thorn, there are three cases of cholera. The Vistula has been declared infected throughout the district near Thorn, and bathing in it has been prohibited.

There is a decided falling off of the epidemic of cholera in Eastern Galicia, the last report showing only four cases and two deaths, the total to date being thirty-nine cases and seventeen deaths. In the Galician towns of Skala and Sikierzynce, both near the Austro-Russian frontier, in which cholera now prevails, the drinking-water used by the people comes from a polluted river; there are no wells or springs. The situation along the Russian frontier may be regarded as dangerous owing to the number of centers of infection.

In Constantinople the condition of the epidemic varies greatly from week to week, but on the whole may be considered as greatly ameliorated. It is believed that the dissemination of cholera in Turkey is chiefly due to transport-ships conveying Turkish troops from point to point.

The accounts of the epidemic at Lisbon are very conflicting. It is certain, however, that an epidemic, at first believed to be simply one of diarrhea, appeared early in April. Later it was announced that the comma-bacillus had been found, and as this occurred at a time when there was an average of seventy cases daily, quite a panic ensued. The epidemic has now somewhat abated, and it is officially denied that the disease was Asiatic cholera.

In Spain sporadic cases of cholera have been reported, but not officially confirmed.

In France cases of cholera continue to occur in the departments of Finistere and Morbihan.

No cases of cholera have been reported in Italy. The quarantine regions of this country have been increased and several new stations established.

The Outcome of a Suit for Malpractice.—In 1888 Dr. C. D. Palmer, of Cincinnati, in performing a perineal operation upon a woman, broke his needle. Careful search failed to find one of the fragments, either in the soft parts or on the floor. The patient was not doing well under the anesthetic, so that further search was deemed unwise and the operation was brought to a finish. A few days afterward the doctor was thrown from his buggy in a runaway accident and received severe injuries about the head, remaining unconscious or semi-unconscious for about a month, and being utterly unable to attend to his business for a year. In the meantime the patient fell into the hands of another physician who operated again and found the needle. A suit for $10,000 for malpractice was brought against Dr. Palmer, but decided in his favor May 26th.

The State Board of Medical Examiners will conduct its first examinations of applicants for license to practise medicine in Pennsylvania on June 11, 12, and 13, 1894, at Philadelphia (at the School of Applied Art, Broad and Vine Streets) and Pittsburg (in the Council Chamber, Municipal Hall). It is announced that those granted licenses by the New York Board of Medical Examiners will receive the certificate of the Pennsylvania Board without examination.

Dr. Emory Lanphear, the editor of the *Kansas City Medical Index*, has resigned the chair of Operative Surgery and Clinical Surgery in the Kansas City Medical College and has removed to St. Louis, to assume the chair of Surgery in the St. Louis College of Physicians and Surgeons.

The Medical Society of New Jersey will hold its one hundred and twenty-eighth annual meeting at Lake Hopatcong, June 26 and 27, 1894. An interesting program has been arranged.

The New Hampshire Medical Society will hold its one hundred and third anniversary meeting on June 18 and 19, 1894, at Concord. An interesting program has been arranged.

Prof. Vincenz Czerny, of Heidelberg, has been designated as the successor of Virchow in the direction of the first surgical clinic of the University of Vienna.

Books and Pamphlets Received.

Albuminuria without Manifest Organic Renal Lesion. By Waldron B. Vanderpoel, M.D. Reprinted from the Medical Record, 1893.

Quiz Compends, No. 4. A Compend of Human Physiology especially adapted for the Use of Medical Students. By Albert P. Brubaker, A.M., M.D. Seventh edition, revised and enlarged, with new illustrations and a Table of Physiological Constants. Philadelphia: P. Blakiston, Son & Co., 1893.

Laughing Gas as an Anesthetic in General Surgery. By T. L. MacDonald, M.D. Reprinted from the Southern Journal of Homeopathy, 1893.

A Text-book of Physiology. By M. Foster, A.M., M.D., LL.D., F.R.S. Fifth American, from the fifth English edition, thoroughly revised, with notes, additions, and three hundred and sixteen illustrations. Philadelphia: Lea Brothers & Co., 1893.

A Treatise on Hygiene and Public Health. Edited by Thomas Stevenson, M.D., F.R.C.P. London, and Sydney F. Murphy. In three volumes. Vol. II. Philadelphia: P. Blakiston, Son & Co., 1893.

Zur Kenntniss der Hyalinen Degeneration der Carcinom-epithelien. Von P. G. Unna. Sonder-Abdruck aus Dermatologische Zeitschrift.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

REPORT ON HYDROPHOBIA.[1]

BY CHARLES W. DULLES, M.D.,
OF PHILADELPHIA.

IN June, 1888, I made my last report to this Society, in pursuance of the resolution adopted at Williamsport, in 1886, asking me to continue my studies on hydrophobia and to report to the Society from time to time. During the six years which have just elapsed I have continued to collate cases of so-called hydrophobia and to study them, with a view to the report which I now make.

The period of time covered by my present report is six years, from June 1, 1888, to nearly June 1, 1894. I have collated for these six years seventy-eight cases which had any claim to be regarded as instances of hydrophobia. A considerable number of these are, in my opinion, utterly incredible and wholly spurious. Admitting them all as true hydrophobia, we have for the United States an average of thirteen cases per annum, or about one case to four and a half million of inhabitants per annum. This is about the same proportion as I found in my last report.

The geographical distribution of the cases was as follows: 62 (about 80 per cent.) in the section of country from Maine to Georgia—14 of these being in the New England States; 43 (55 per cent. of the whole number) in New York, New Jersey, and Pennsylvania; and 5 altogether in Maryland, South Carolina, and Georgia. Only 16 cases (20 per cent.) occurred in the country west of the Allegheny Mountains.

This distribution I attribute to the influence of the newspapers published in New York and Philadelphia, which have at times, especially those in New York, given too much space to descriptions of the horrors of so-called hydrophobia, and to the exploitation of the Pasteur Institute established in New York. Twenty-four cases occurred in New York City and places in Long Island and New Jersey which may be considered as environs of New York—like Jersey City, Newark, Elizabeth, etc.

[1] Read before the Medical Society of the State of Pennsylvania, May 16, 1894.

The table of 78 cases accompanying this report will be published in the Transactions of the Pennsylvania State Medical Society and the Transactions of the College of Physicians of Philadelphia for 1894.

In studying the cases that have come under my notice in the last six years I have been impressed by their bearing upon the views expressed in some books and papers on the subject as to the age at which hydrophobia occurs, and the relation of the length of the period of incubation to the age of the patient and the situation of the bite.

In regard to age, I find that this varied from what was called "a baby" to what was called "old."

Of the 78 victims, 18 were under ten years old; 16 were between ten and sixteen years old; 8 were between seventeen and thirty-one years old; 34 were between thirty-five and fifty-seven years old; 1 was said to be "old," and the age of one has not been ascertained.

TABLE OF AGES.

Little children.	From 10–16 years.	From 17–31 years.	From 35–57 years.	Old.	Not stated.
Baby, 1	11 y'rs, 5	19 y'rs, 2	35 y'rs, 2	1	1
3 years, 2	12 " 4	22 " 3	Adult, 23		
4 " 3	13 " 3	27 " 1	40 y'rs, 1		
5 " 3	14 " 1	28 " 1	43 " 1		
6 " 4	15 " 2	31 " 1	45 " 1		
7 " 2	16 " 1		48 " 2		
8 " 2			50 " 2		
9 " 1			53 " 1		
			57 " 1		
Total, 18	Total, 16	Total, 8	Total, 34	1	1

Of these victims of so-called hydrophobia, the only ones too young to have distinct notions in regard to this disease were the "baby" (No. 59), about whom I have no evidence that the case was one of hydrophobia except a newspaper headline; a child of three years (No. 27) that was bitten by a dog that was living and well six months later, when the child died; another child of three years (No. 44), about which I have only a brief newspaper item, saying the disease was pronounced hydrophobia; a child four years old (No. 10) that died in convulsions six weeks after having been bitten by a dog of which nothing was known, and attended by a physician whose name I cannot find in any medical directory; a child four years old (No. 35) that died in Philadelphia after having been bitten by a pet dog with which he was playing and about which there is not a particle of evidence that it was rabid (a case that the coroner refused to admit as hydrophobia); and another child four years old (No. 68), bitten by a dog on whose sore foot he had

trodden, and the owner of which scouted the idea that it was rabid. All the rest were of an age at which most persons have very distinct notions about and fear of hydrophobia.

In regard to the relation of the period of incubation to the age of the patient and the situation of the bite, the statistics of the United States for the last six years are, I think, very instructive. They indicate precisely what is found upon studying the thousands of cases reported in books and medical journals which I have investigated, namely: That the facts do not in the least support the theory that bites near the center of the nervous system are more dangerous or more likely to be followed by a brief period of incubation than those inflicted on more remote parts. In our statistics we find a child four years old bitten on the face, with an incubation-period of nearly five months, and a man thirty-five years old bitten on the hand, with an incubation-period of only four weeks. We have also a four-year old child bitten on the finger, with an incubation-period of three weeks, and an adult bitten on the leg, with an incubation-period exactly the same. Taking all the cases together, we find that after bites on the face the incubation-period was less than the time-honored quota of six weeks in only a third of the cases, while the same is true of a full fourth of the cases of bites on the hand and wrist. These facts correspond to what other statistics show. Nobody can predict the length of the period of incubation, even approximately, from a knowledge of the seat of the bite or from a knowledge of the age of the patient. Assertions to the contrary are either pure assumptions or are founded upon averages, which are false and misleading.

Table of Situation of Bite, Age of Patient, and Period of Incubation.

Face.

Age.	Incubation.	Remarks.
Baby	3 weeks.	
4 years	6 "	Cauterized.
4 "	6 "	"
4 "	8 "	"
4 "	19 "	
5 "	3 "	
6 "	6 "	
6 "	6 "	
8 "	9 "	
9 "	13 "	
11 "	3 "	
13 "	6 "	
Adult	3 "	
"	3 "	
"	6 "	Total, 15

Arm.

14 y'rs	13 weeks.	Cauterized.
Adult	13 "	
40 y'rs	13 "	Total, 3

Leg.

7 y'rs	18 weeks.	
Adult	3 "	
"	13 "	Total, 3

Hand and Wrist.

Age.	Incubation.	Remarks.
5 years	4 weeks.	Cauterized.
11 "	3 "	
11 "	9 "	
12 "	8 "	Dog not rabid
13 "	19 "	
15 "	several "	
15 "	22 "	
19 "	10 "	
22 "	9 "	
28 "	7 "	Cauterized.
Adult	4 "	
"	5 "	
"	8 "	Cauterized.
"	9 "	
"	13 "	
"	13 "	
"	78 "	
"	12 years.	
35 years	4 weeks.	
48 "	6 "	
48 "	13 "	
50 "	40 "	Cat-bite.
53 "	8 "	
Old	13 "	Total, 24

The foregoing table gives the details of the cases I have collected in the last six years in regard to the situation of the bite, age of the patient, and the period of incubation.

The number of cases of hydrophobia that occur in this country is happily small. It would doubtless be smaller still but for the exploitation of the Pasteur Institute, conducted by Gibier, in New York, and of its feeble imitator, conducted by Lagorio, in Chicago. These institutions, and the newspapers that in times past have published sensational accounts of cases of so-called hydrophobia, have in a mild way reproduced some of the conditions which make France the hotbed of hydrophobia, as well as of hystero-epilepsy. But the psychological make-up of Americans is less favorable to the development of the germs of hydrophobia or those of hystero-epilepsy than that of the French, and consequently there is less of both here than there is in France. There the history of the last six years differs but little from that which I described to you in my last report. As then, so now, the number of deaths in France is greater than it was before Pasteur, just ten years ago (in May, 1884), boasted to a newspaper reporter: "Whoever gets bitten by a mad dog has only to submit to my three little inoculations, and he need not have the slightest fear of hydrophobia." The year before he made that boast there were four deaths from hydrophobia in Paris (the Department of the Seine); the year after, when he had practised his preventive method for six months, the deaths from hydrophobia leaped at once from four to twenty-two. In 1886 the number fell to three again in Paris; but I have a list of twenty-three persons that died after treatment by Pasteur himself in that year. In 1887 the deaths in Paris rose to nine, in 1888 to nineteen. These oscillations indicate that Pasteur's method is no more preventive of hydrophobia than is the method which he declared in 1884 would eradicate rabies in dogs. On the contrary, Pasteur's method has undoubtedly increased the number of deaths from hydrophobia. I have indicated what has taken place in France, and can assure you that there has been no diminution in the number of deaths from hydrophobia in any part of the world since Pasteur's infallible cures were inaugurated; and at the same time there has been added to these a large number of deaths due to inoculation of the virus of what ought to be called "Pasteur's disease." Just how many these have been no man can say. The statistics are confusing. Those from friendly sources contain remarkable discrepancies. Pasteur's own statistics, published in the *Annales de l'Institut Pasteur* for March of this year, admit seventy-two deaths in seven and one-half years after treatment in Paris. My own show a much larger

number, while I find that Dujardin-Beaumetz, a most enthusiastic supporter of Pasteur, reported to the Académie de Médecine on June 21, 1892, ninety-eight cases in only six years, which is just twenty-six cases more than Pasteur himself reported for eight years. One way in which such curious figures appear may be seen when we examine Pasteur's detailed report for 1893, in which we find that ten actual deaths are set down as four, because two of the ten unfortunates succumbed in less than fifteen days, three developed their fatal disease while receiving the inoculations, and one did not stay to have the treatment completed. The same manipulation may be found in the reports for other years.

In view of these facts, and of others which I cannot detain you with, it is astonishing to see how medical writers quote approvingly the claim that the Pasteur method has reduced the mortality from hydrophobia from 15 or 16 per cent. of those bitten by rabid animals to a fraction of 1 per cent., especially as this claim of Pasteur and his disciples, besides being in the face of the fact that more people die now from this disease and Pasteur's disease than used to die from hydrophobia, rests upon the stupendous fallacy that Pasteur has saved from death by hydrophobia during the last eight years nearly 15,000 persons, who are in the report spoken of as "cured," of whom about nine-tenths were Frenchmen, say about 1500 a year. Of this number he is supposed to have "cured" about 1400 Frenchmen in the year 1893—more persons than have died from hydrophobia in the United States in a century.

But for the frequent use of the word "cure" by Pasteur and his disciples, it would be better to assume that his claim to have saved life covers only 15 or 16 per cent. of the figures given here.

One of the perils of the science of medicine at the present time is the credulity which some writers show for statements published from experimental laboratories and the contempt which they manifest for sources of knowledge that conflict with laboratory-theories. One might suppose that prolonged study of what has been written in regard to a subject from a clinical, an experimental, and a philosophical standpoint would warrant a conscientious and fairly intelligent investigator in believing that he knew something about it; but my experience shows that this will not protect one against the scorn of some who spend more time in producing artificial diseases in test-tubes and guinea-pigs than they do in curing natural diseases in human beings.

On this occasion you may be spared the labor of trying to follow figures to establish what I say. You know that I have said such things as this often before, and that they have been published and spread abroad where their credibility might be impeached if they were incorrect, and their fallacy exposed if they were fallacious.[1] But nothing of this kind has happened. Thus far no man has cared to proceed to a deliberate and detailed review of the arguments by which I have at various times endeavored to present to others the views in regard to hydrophobia which I hold, and which are held by a large number of intelligent men.

With this I conclude what I have to say on this occasion. I speak earnestly, because I feel deeply, and I believe what I have said to be of great importance to humanity. With less earnestness I should long ago have given up a course which has had abundant pains and few rewards.

CHRONIC APPENDICITIS.[2]

BY JOHN B. DEAVER, M.D.,
OF PHILADELPHIA.

I PURPOSE considering chronic appendicitis under two heads, namely, relapsing and recurrent, and under these headings I will class all varieties of appendicitis that are not acute. There are cases, however, which strictly speaking are border-line cases. The subacute inflammations of the appendix that follow acute attacks and that have responded to treatment represent this class, but clinically these varieties are most advantageously included under the head of chronic appendicitis.

A patient who has had an attack of acute appendicitis with the characteristic colicky pains, vomiting, and localized tenderness, which has responded to rational treatment, with subsidence of all acute symptoms excepting tenderness in the right iliac fossa, is left in a subacute condition. If this subacute condition is followed within a short space of time by another acute attack, it is an example of the relapsing variety. The recurrent variety is that in which there is an interval of quiescence. In this there is an absence of the symptoms of acute appendicitis. This type is characterized by the evidences of chronic inflammation. Palpation will disclose the presence of an enlarged and inflamed organ, which is more or less tender, according to whether pus be present or not. The mass is more easily made out if there are marked and extensive adhesions, and there will be a decided tumor if the appendix be enveloped in adherent omentum. In a recent article by Dr. Edebohls, published in the *American Journal of the Medical Sciences*, he de-

[1] Disorders Mistaken for Hydrophobia, Trans. Med. Soc. of State of Pennsylvania, 1884. Treatment of Hydrophobia, Historically and Practically Considered, Journ. of the Amer. Med. Assoc., Aug. 6, 1884. Comments on Pasteur's Method of Treating Hydrophobia, Medical Record, New York, Feb. 13, 1886. Case of So-called Hydrophobia, with Remarks, etc., Lancet, London, May 1, 1886.

[2] Read before the Forty-fourth Annual Session of the Medical Society of the State of Pennsylvania, May 15, 1894.

scribes a method of palpating the normal appendix in women as follows:

After completion of the ordinary bimanual examination of the pelvic organs, the woman is drawn upward upon the table to the extent of a foot or so, her feet still remaining where they were placed for the vaginal examination. This is done mainly for the purpose of unfolding the flexure of the thigh upon the abdomen and to render the right inguinal region more accessible to the palpating hand. One hand only, applied externally, is required for the practice of palpation of the vermiform appendix. No assistance can be rendered by a finger introduced into the vagina, and very little assistance, and that only occasionally, by a finger introduced into the rectum.

The examiner, standing at the patient's right, begins the search for the appendix by applying two, three, or four fingers of his right hand, palmar surface downward, almost flatly upon the abdomen, in a straight line from the umbilicus to the anterior superior spine of the right ilium; he notices successively the character of the various structures as they come beneath and escape from the fingers passing over them. *In doing this the pressure exerted must be deep enough to recognize distinctly, along the whole route traversed by the examining fingers, the resistant surfaces of the posterior abdominal wall and of the pelvic brim.* Only in this way can we positively feel the normal or the but slightly enlarged appendix; pressure short of this must necessarily fail.

By this method I have been able to palpate an appendix which was but slightly enlarged. There are associated with the presence of the enlarged appendix evidences of intestinal indigestion, discomfort, or pain increased by exertion and referred particularly to the right iliac fossa, mucous diarrhea alternating with constipation, and digestive irregularities. There is indisposition and general debility. When tuberculosis enters into the causation there is decided emaciation. Neurasthenia is often an associated condition. Exercise and undigested food, by increasing peristalsis and thus pulling upon the adhesions, frequently cause exacerbations of pain. Fever is of importance only when it is of the hectic type.

The diagnosis of chronic appendicitis is not always easy. There are many affections that may be localized in the right iliac fossa which are not easily differentiated from chronic forms of appendiceal inflammation. Carcinoma of the intestine, while occurring most frequently in the rectum, does occur also in the sigmoid flexure and in the cecum. The tumor of carcinoma is, however, persistent, while in chronic appendicitis the tumor will at times be marked and at other times hardly perceptible and will sometimes even be absent. In carcinoma there will be mucous and bloody diarrhea, associated with occasional attacks of obstruction. These symptoms, accompanied by decided and progressive emaciation and cachexia, and persistent pain and the absence of marked tenderness, will be the main points in making the differential diagnosis. Exploration may be necessary to establish a diagnosis.

In the presence of an enlarged appendix, with rigidity and a moderate degree of circumscribed tenderness in the right iliac fossa, occurring in a patient who presents a decidedly anemic appearance, and who gives a family history of two or more members of the immediate family having died of pulmonary tuberculous, it is difficult to draw the lines of distinction between tuberculous inflammation of the cecum and possible involvement of the appendix and chronic appendicitis. Primary tuberculosis of the intestine is more common in children than in adults, and when occurring in the latter is ushered in with colicky pains, irregular diarrhea, and slight fever. In this class of cases examination of the chest, sputa, and dejecta is negative. In a few cases there may be hemorrhage from the bowels. The abdomen in tuberculous disease is apt to present a scaphoid appearance, while in chronic appendicitis there is fulness.

Tuberculous peritonitis may be confounded with chronic appendicitis. The abdomen in the former condition is usually moderately distended, though not uniformily so, but may be concave with the walls tense and unyielding. Palpation of the abdomen in tuberculous peritonitis may reveal the presence of masses either of thickened omentum or of enlarged mesenteric glands. When these masses are located in the right iliac fossa they may be mistaken for a chronically enlarged appendix, although the fact that there is more than one mass present will exclude the appendix. Pain may or may not be present, and when present it is usually diffused.

The diagnosis between chronic appendicitis and fecal impaction can be dismissed with the statement that a collection of dry feces in the cecum in obstinate constipation is so extremely rare that it is not a factor in the differential diagnosis. I have never met with a cecum distended with feces at operation, and therefore I believe the sausage-tumor described by some recent writers as being present in the right iliac fossa, existed not in the belly of the patient, but in the mind of the writer. Furthermore this statement is corroborated by all operators of experience.

From chronic intussusception, the differential diagnosis will rest upon the fact that this occurs most frequently in children; that there is present a doughy, irregular ovoid mass, associated with spasmodic attacks of abdominal pain and tenesmus, which occur at irregular intervals and are accompanied by a discharge of blood and mucus from the rectum. Digital examination of the rectum may detect the invaginated gut.

From floating kidney, chronic appendicitis may be differentiated by the presence of a movable tumor, blood in the urine, a depression in the loin cor-

responding to the site of the kidney, and possibly symptoms of uremia.

From psoas abscess and iliac abscess, chronic appendicitis can be diagnosticated by the history of the slow onset, little or no fever, generally accompanied by evidence of bone-disease, and the absence of pain, tenderness, and bowel-symptoms.

Neuralgia of the right iliac fossa may be mistaken for chronic appendicitis, but the intermittent character of the pain, which is relieved rather than increased by pressure, should establish the diagnosis.

From chronic salpingitis or ovaritis the diagnosis is readily made by a vaginal examination coupled with the history.

The treatment of chronic appendicitis resolves itself, in my judgment, into that of the removal of the appendix. In my experience the mortality has been *nil*, as will be observed by the thirty cases reported. In closing this paper I would call attention to the three important facts to which I attribute my success in the treatment of chronic appendicitis: First, the careful preparation of the patient before the operation; second, the thoroughness and rapidity of the technique; and third, the absolute exclusion of opium in any form in the after-treatment.

Name.	Age.	Sex	Date.	No. of attacks	Condition of bowels.	Position of appendix.	Pus.	Adhesions.	Treatment of stump.	Remarks.
D. R.	34	M.	July 20, 1890	Two	Constipated	S. W.	Yes	Yes	Tied off	Abscess-cavity walled off.
A. B.	9	F.	Sept. 12, 1891	One	"	N.	Yes	Yes	"	Appendix partially gangrenous.
F. F.	28	M.	1892	One	Normal	N.	Yes	Yes	"	Abscess-cavity walled off.
L. F.	30	M.	April 11, 1893	One	.....	N. E.	Yes	Yes	"	" " " " "
W. I.	35	M.	May 3, 1893	One	Constipated	N.	No	Slight	"	Mucous and submucous coats greatly thickened.
R. S. B.	25	M.	May "	Two	.....	S. E.	No	Slight	"	Long meso-appendix.
Mrs. K.	25	F.	May "	One 7 y'rs ago	.....	S.	Yes	Slight	"	Pain in right iliac fossa since acute attack; in bed for nineteen weeks prior to operation; short appendix.
C. N.	39	M.	Aug. 14, "	Four	Diarrhea	S.	No	Firm	"	Appendix tightly bound down by adhesions.
T. W.	28	F.	Jan., 1894	Two	"	S. W.	No	Slight	"	Two coproliths.
Mrs. B.	30	F.	Dec. 29, 1893	One	Constipated	S. W.	Yes	Numerous	"	Appendix gangrenous.
A. M.	17	F.	Jan. 2, 1894	One	Normal	N.	No	No	"	Appendix post-cecal.
I. R	21	F.	Jan. 20, "	One	Constipated	S.	No	Slight	"	Long meso-appendix.
L. V.	49	F.	Jan. 30, "	Three	Diarrhea	S.	No	Firm	Circular amputation; peritoneal flap over stump	Appendix short, bound down.
E. B. P.	50	M.	Aug. 19, 1893	Five	"	N. E.	No	Firm	" "	Ulceration, with purulent collection in appendix.
M. C.	23	F.	Feb. 8, 1894	One	.....	N. E.	No	Slight	" "	Appendix thickened.
C. F. Z.	23	M.	Feb. 8, "	Two	Constipated	S. E.	Yes	Firm	Tied off	Adhesions to omentum.
J. McC.	19	M.	Mar. 14, "	Three	.....	N.	Yes	Firm	Circular amputation; peritoneal flap over stump	Appendix bent, twisted, gangrenous.
S. F.	30	M.	Mar. "	Four	.....	N. W.	No	Firm	" "	Adhesions entirely surrounding appendix.
M. S.	60	F.	Mar. "	One	.....	S. W.	No	Numerous	" "	Long meso-appendix.
M. H.	65	M.	Mar. "	One	Constipated	S. E.	Yes	Firm	" "	Short " "
J. T. B.	34	F.	April, "	One	Diarrhea	S. W.	No	Firm	" "	Appendix tied down.
R. D	18	M.	April 3, "	Three	"	N. W.	Yes	Firm	Tied off	Sinus in right lumbar region leading to orifice in appendix.
H. E. W.	26	M.	April 4, "	Four	"	N. E.	Yes	Firm	Tied off and invaginated	Tip adherent to cecum, ulceration at point of contact, stump with margin of cecal ulcer invaginated.
L. W. G	31	M.	April 7, "	One	Constipated	N.	Yes	Firm	Amputat'n; peritoneal flap over stump.	Appendix enveloped in wall of omentum.
E. B.	27	F.	April 17, "	Three	Diarrhea	S. W.	No	None	" "	Appendix very long.
L. P. B.	38	M.	April 18, "	One	.....	N. W.	Yes	Firm	" "	Appendix twisted and gangrenous.
H. G.	58	M.	April 21, "	Three	.....	S.	Yes	.....	" "	Abscess-cavity walled off.
H. O.	35	F.	April 29, "	Two	Constipated	S. E.	No	Numerous	" "	Appendix enlarged.
I. G.	53	F.	April 30, "	One	Diarrhea	N.	No	Slight	" "	Walls infiltrated.
E. T.	14	M.	May 2, "	One	Constipated	S.	No	Firm	" "	Appendix adherent to mesentery; during acute attack passed a cast of the appendix.

NATIONAL CONTROL OF LEPROSY.[1]

BY WALTER WYMAN, M.D.,
SUPERVISING SURGEON-GENERAL U. S. MARINE-HOSPITAL SERVICE.

In the few minutes allotted to me I propose to discuss the relations of the National Government to the subject of the control of leprosy.

In October, 1889, the American Public Health Association, at its meeting in Brooklyn, passed a

[1] Delivered before the Congress of American Physicians and Surgeons, Washington, D. C., May 30, 1894, under direction of the American Dermatological Association.

resolution calling upon the Marine-Hospital Service and the State Board of Health of Florida, and all quarantine-commissioners of ports having intercourse with Cuban ports, to exercise the same vigilance with regard to leprosy that is already observed in the case of yellow fever during what is known as the quarantine-period. In accordance with this request, a circular was issued by the Surgeon-General of the Marine-Hospital Service, approved by the Secretary of the Treasury and the President, December 23, 1889, forbidding entry of any vessel to any port of the United States without a certificate from the proper officer that no case of leprosy was found on board said vessel, or in case one had been found, that it had been removed from the vessel and detained at the quarantine-station ; with a further provision permitting the departure of the detained leper on outgoing vessels bound to the foreign country from which the leper last sailed.

The new Quarantine Regulations of the Treasury, promulgated April 26, 1894, provide as follows :

"Vessels arriving at quarantine with leprosy on board shall not be granted pratique until the leper with his or her baggage has been removed from the vessel to the quarantine-station.

"No case of leprosy will be landed.

"If the leper is an alien passenger, and the vessel is from a foreign port, action will be taken as provided by the immigration laws and regulations of the United States.

"If the leper is an alien, and a member of the crew, and the vessel is from a foreign port, said leper shall be detained at the quarantine at the veesel's expense until taken aboard by the same vessel when outward bound."

Furthermore, the immigration-law of the United States, providing for the medical inspection of immigrants, forbids the landing of immigrants afflicted with a loathsome or contagious disease, thus furnishing an additional protection against the importation of cases of leprosy. These laws and regulations have, in a measure at least, been effective. I am informed by the Sanitary Inspector stationed at Havana that several persons afflicted with leprosy desiring to immigrate to Florida have been debarred from so doing by reason of these restrictions.

National control of leprosy *within* the United States has been frequently advocated, particularly by State and municipal boards of health, when finding such cases upon their hands and desirous of being relieved of their care. The arguments for such control, of course, are based upon the presumption of the contagiousness of the disease (even though moderately contagious) and also upon the claim that where no segregation of cases, or no supervision of cases not colonized is enforced, the disease gradually increases in prevalence, and that where segregation or colonization has been enforced the disease has been made to disappear.

One reason alleged for a national establishment is the fact that in some States the disease is of so rare occurrence that the erection of a special hospital or place of confinment for lepers is scarcely justified, and it is desirable, therefore, that there should be established an asylum to which any of the States might send these unusual but highly objectionable patients. It is further urged that by reason of the difficulty of properly caring for lepers, and because of the uneasiness and excitement that would prevail in cities or localities should the presence of a leper be announced, the health-authorities themselves are tempted to conceal the cases from the knowledge of the public. Thus, if there is anything in the doctrine of contagiousness whatever, the local authorities themselves may directly aid in the extension of the disease. If a national asylum were provided there would be no motive for concealment. Granted that the danger of contagion is small ; granted that, in the language of another, a case of leprosy within a family should be regarded with less concern in its relation to the health of the remaining members than a case of tuberculosis ; granted that the disease spreads chiefly among the lower classes, nevertheless in the movement which is now only near the starting-point, but which promises to be a controlling movement, and which will mark the close of the present century and the beginning of the next, so far as medical science is concerned, as distinctly as any other evidence of progress in the healing art (I refer to the settled resolution to exterminate every contagious disease), it would appear to be incumbent on the profession to leave nothing undone to exterminate this, together with other communicable diseases.

Now, with regard to national control, there are two considerations involved. *First :* Does the *right* of national control exist? *Second :* If it does, how may that right be best exercised?

Concerning the first consideration, I find a difference of opinion among eminent men with whom I have conversed, based upon their different views regarding the Constitution of the United States.

A strict constructionist will inform you that the United States Government can only legislate in accordance with powers expressly delegated by the Constitution, and that the general-welfare clause of the Constitution applies as a qualifying clause to the specified prerogatives—that the latter are only granted when necessary for the general welfare.

The States, however, may make any laws which are not forbidden by the Constitution of the United States. This view would discourage the attempt to establish a national leper-hospital by the General

Government, but it is claimed that the end might be met by one State establishing a hospital and being willing to receive into it the lepers consigned from other States, their expenses being paid by the latter, as has been done in a number of instances with regard to jails and penitentiaries.

Those who take a different view of the Constitution assert that it is quite within the province of Congress to appropriate a sufficient sum to establish a national leper-hospital, though the necessity for it must be plainly shown. They call attention to laws already passed to which objections similar to those mentioned above were urged.

An outline of a bill for this purpose might be stated as follows:

An Act appropriating a sufficient sum to establish a national leper-hospital, and authorizing the national officer in charge thereof to receive, or to proceed and take possession of, a leprosy-patient upon the consent of the proper authority of the State. There should be a corresponding act passed by the Legislature of the State, conferring power upon some official—preferably the Governor, with the advice of the State Board of Health—to *respond* to such a requisition. It should be made the duty of the Government officer in charge of the institution, upon hearing of the presence of a leprosy patient, to request such authorities of the State as have been designated for that purpose by the Legislature, to turn over said patient to said officer, for the purpose of being transferred to said hospital; and the Congressional act should also provide that the officer in charge of the institution should make such regulations for the treatment and confinement of the patient as the nature of the case demands.

It will be observed that an act of this nature would still practically leave the determination of the disposition of the patients within a State to the States itself, and leave to the discretion of the Governor and the State Board of Health whether in a given instance the leper should be segregated. The necessity of this discretion is evident from the fact that special circumstances might so surround a given patient as to make it cruel or unnecessary to remove him. At the same time it would provide for the proper removal and proper care of those who are not surrounded by such circumstances. To the objection that some States might fail to thus legislate or avail themselves of the privilege of a national institution, it may be urged that in this event the law of February 15, 1893, which permits the making of regulations to prevent the spread of contagious diseases from one State to another, could be brought into exercise to prevent lepers leaving such a State. It is believed that this State would in time have a physical demonstration of the necessity of taking advantage of the national institution or of making equal provision itself.

This is a brief outline, which it might be necessary to modify.

To determine whether such a bill would pass, it would be necessary to introduce it, but, as preliminary to its passage, its necessity would have to be demonstrated to Congress. For this purpose, and that Congress may be assured that the medical profession and sanitary officers had not acted upon insufficient premise, it is suggested that a leprosy-commission should be appointed, of three or five members, to make report upon the prevalence of leprosy in the United States and the necessity and proper method of its control.

A preliminary bill might be introduced empowering the President to appoint such a commission; and, as the success of the bill would be enhanced if it called for no additional appropriation, there might be included a provision setting aside a portion of what is known as the "Epidemic Fund," to meet the expenses of this commission.

Whether a national leper-hospital would be the result of this action or not, a commission of this character would cause a sense of relief to the people of the United States, whatever its conclusions, either affirmative or negative, as to such establishment.

As for myself, I believe that leprosy should be under national control.

REPORT ON IRRIGATION OF THE URETHRA AND BLADDER WITHOUT A CATHETER.[1]

BY GEORGE EMERSON BREWER, M.D.,
OF NEW YORK.

SOME three years ago my attention was directed to a report of some experiments by H. Felike, of Buda-Pesth, published in the *Internationale Centralblatt für die Physiologie und Pathologie Harn- und Sexual-Organe*, which demonstrated that, whereas, under ordinary circumstances, fluids cannot be forced beyond the compressor urethræ muscle, by means of the ordinary urethral syringe, the resistance of this muscle can be readily overcome when subjected to the pressure of a column of water of from one to three meters in height. His method was as follows:

The patient, immediately after a complete emptying of the bladder, was placed in the horizontal position on a table or bed. The blunt nozzle of a fountain-syringe was introduced just within the external urethral orifice, and the meatus gently compressed against it by the thumb and forefinger. The reservoir was then raised to a height of two meters, and the patient instructed to take one or two deep inspirations, allowing the air to rapidly escape by complete muscular relaxation. In a few moments the subject of the experiment would experience a desire to urinate, when it would usually be found that the bladder had been completely

[1] Read by title before the American Association of Genito-Urinary Surgeons at Washington, D. C., June 1, 1894.

filled without the slightest discomfort to the patient and often without his knowledge.

The idea of irrigating the bladder in this manner, although new to me at that time, was by no means a recent discovery, for upon looking over the literature of the subject, it was found that Dr. C. B. Crossfield had published in the *New London Medical Journal*, in 1792, a report of some similar experiments, in which he succeeded in irrigating the bladder from the meatus by means of continuous pressure furnished by an ordinary bulb-syringe; and in 1876, Dr. Hunter McGuire reported successful bladder-irrigation in the same manner. Being impressed with the advantages which this method of vesical irrigation offered over the ordinary procedure by means of a double-current or single-current catheter introduced into the bladder, I determined to give it a trial.

The first patient was a middle-aged man who had suffered for twenty-five years from symptoms of chronic prostatitis and posterior urethritis, with the frequent occurrence of an acute bladder-infection, during which he suffered intensely. For these attacks he had frequently been treated by bladder-irrigation, the catheter being introduced in the usual manner. This, while it seemed to have a favorable effect upon the cystitis, was always so painful as to cause acute suffering for a considerable period after the operation, and was often productive of so much irritation in the deep urethra as to render its continued use impracticable. It was during one of these acute attacks that he first came under my observation, and his urgent request for me to avoid, if possible, or at least postpone the introduction of any instrument into the bladder, led to a trial of the method described. The result was strikingly satisfactory, for the man not only recovered far more rapidly than was usual from such attacks, but he was able to accomplish this result without the dreaded pain which always attended the introduction of a catheter. In this case, after the first two or three washings, the patient was able to irrigate his own bladder without the slightest difficulty, and, on several occasions since this attack, has been able to abort a return of the symptoms by an early resort to this simple procedure.

A number of other experiments were subsequently made with a view to testing the value of this method in patients suffering with various diseases of the urethra and bladder in which irrigation was indicated, and, although the results have not, in every instance, been as satisfactory as in the case cited, it may be said that the irrigations were accomplished with much less discomfort to the patient than is usual when the catheter is employed. The only disadvantages which were observed were in cases exhibiting an unusual amount of tonicity of the sphincter muscle, and in these the first few attempts were attended with considerable delay before the fluid would pass into the bladder. In only one case under my observation has it been impossible to accomplish this result.

It is, however, in the treatment of chronic urethritis that this method seems to be most useful. In certain obstinate cases of gleet, especially when there is an involvement of both the anterior and posterior portions of the urethra, the daily irrigation of the entire canal is often attended with the most satisfactory results. The method most generally employed to accomplish this is perhaps that of Prof. Ultzmann, which consists in the introduction into the deep urethra of a short silver catheter, in the beak of which are several longitudinal slits. This, when in position, is so situated that the longitudinal openings are posterior to the compressor urethræ muscle. Several ounces of a medicated solution are then injected by means of a large, hard-rubber syringe. The fluid, after thoroughly washing the posterior portion of the canal, passes into the bladder, and is later expelled by the voluntary efforts of the patient after the withdrawal of the catheter. This insures a double irrigation of the posterior and a single washing of the anterior portion of the urethra.

As one of the many methods of treating this most annoying condition, I have often employed the method of Prof. Ultzmann, and frequently with happy results. The objection has been raised by several who have made use of this plan of treatment, that the metallic instrument often produces by its presence in the deep urethra well-marked irritation, giving rise to frequent and painful micturition, with vesical tenesmus. Not infrequently also when spasm of the cut-off muscle is present, the mucous membrane is lacerated by the sharp edges of the longitudinal openings, occasioning considerable hemorrhage.

Although recognizing the marked advantage which urethral, and especially posterior urethral irrigation offers over all other methods of treatment in certain cases of this kind, I had practically abandoned its use, owing to the objections stated. As irrigation without a catheter seemed to possess all the advantages of the Ultzmann procedure, and to avoid the chief objections attending its use, a trial of this plan was made in several cases, of which the following is an example:

B. F., thirty-four years of age, was referred to me by the medical examiner of one of our large insurance-companies, to find, and, if possible, remove the source of a small amount of pus which was habitually present in his urine. There had been a history of several attacks of gonorrhea during the past twelve years, with a more or less continuous gleet. An examination revealed a penis of three and a half inches in circumference; urethra free to 34 from bulb to meatus. The urine contained a faint trace of

albumin. In the first specimen passed there were found *Tripper-fäden* and a few pus-cells; in the second specimen a small amount of free pus. Endoscopic examination revealed the presence of congested areas and glandular involvement in the bulbous region, with marked hyperemia of the deeper portion of the canal. The patient had been treated by internal urethrotomy, sounds, and injections for many months, with some improvement. An irrigation was made by means of the Ultzmann catheter, with as much gentleness and care as possible. Considerable hemorrhage resulted, and the pain and tenesmus which followed necessitated the patient's going to bed. A day or two later the urethra was irrigated without a catheter, in the manner described, with a 1 : 5000 solution of nitrate of silver, without the slightest discomfort. This was continued daily for a week or more, when the patient was obliged to suspend treatment for a considerable period of time, owing to an enforced absence from home. On his return the irrigations were resumed, with a gradual increase in the strength of the solution, and with marked improvement. It may be added that on two occasions attempts had been made to make applications to the deep urethra through an endoscopic tube, both of which produced extreme irritation. The patient is now nearly well. The pus has disappeared from the second specimen of urine, and only a few *Tripper-fäden* remain in the first.

The foregoing case is reported, not as an example of a cure by this method, for the case is still under treatment, but simply because it illustrates the fact that a sensitive urethra can be irrigated in this manner without irritation.

As to the advantages which this method of urethral and bladder irrigation offers over those usually employed, and which are accomplished by means of the introduction of instruments, it may be said, in general, that there is less danger of septic infection, and far less danger of violence to the parts, and for these reasons it may with greater safety be intrusted to the patient in such cases in which prolonged treatment is necessary.

CRAMMING IN OUR MEDICAL SCHOOLS.[1]

BY OSCAR H. ALLIS, M.D.,
SURGEON TO THE PRESBYTERIAN HOSPITAL.

A FEW years ago the ease with which a medical diploma could be obtained led to the passage of a law in many of the States that necessitated a three years' attendance upon a graded course of medical lectures. The effect of this has been the multiplication of professional chairs. In addition to the seven original professorships there are now a much greater number of honorary professorships.

With the increase in the length of the term and an increase in the teaching staff, there has grown up a remarkable change in the mode of instruction, and this is especially observable in the effort to make the course as practical as possible. The student now has much laboratory-work, class-demonstrations, bedside ward-training, and daily special and general clinics; and yet with all this there never was a greater rush for post-graduate opportunities in the shape of hospital-appointments than now. For a time the faculties of our colleges took no hand in these scrimmages; but they soon learned that it was no small honor to the college to be represented in our best hospitals, and hence, during the final year of college-work, students that expect to apply for hospital-appointments are subjected to special training, and a professional quiz is regularly instituted with a view to give special opportunities to those desiring them.

Prior to the present year the diploma of any of our chartered medical schools was the only requirement by law for the general practice of one's profession in Pennsylvania; but the present State law makes a diploma only a passport to the Board of State Medical Examiners.

And what has been the result of the great increase of professional chairs, the rivalry for hospital-appointments, and the creation of a State Board of Medical Examiners? The answer is only too apparent, viz., to increase the hardships of the medical student. Hard and unsatisfactory as it was when he could get his degree in two years, it is doubly hard and far more oppressive under the extended course. He hears conflicting theories in the lecture-room, and sees the results of conflicting treatment in the daily clinics. He is expected to pass an examination upon oral demonstrations, oral class-instruction, oral lectures and clinics from a score of specialists, and must depend wholly upon notes, meager and almost too hastily taken to be deciphered, with no time or strength to rewrite or correct them. A day, a single week at longest, is enough to convince the ablest student that he will have no time to read, take notes, think, digest, or remember, and that he must hire someone to do all this for him. Hence has sprung up indispensable accessories to the class-room, viz., the quiz-masters. Sharp, shrewd, wonderfully well-posted men! Men who know the foibles, the vanities, the eccentricities of instructors, and who are masters of the minutest detail of every subject—walking encyclopedias, with patience and forbearance suited to their callings. Quiz-masters have existed for a century, but never before were they absolutely essential throughout a whole course to the best and ablest students. It is not necessary to go into the details of their work. I simply say to those who took their degrees fifteen or twenty years ago, that they can have no idea of the quiz-system of to-day. I will pass over the

[1] Read before the Medical Society of Pennsylvania at the forty-fourth annual session, May 15, 1894.

quizzing throughout the session, and only allude to a single branch. Each student knows a week or so before his final examination when he is to "come up," and for this he is taken under special training. For nine mortal hours, with refreshments to prevent interruptions, into the small hours of the morning the entire special branch is reviewed. Then a rest of one night and a second review for an equal length of time. Incredible as this may seem, I may add to its incredibility by saying that the student after all this will often sit up all night and study to the last moment before the final ordeal of examination. And this is only for one branch; and the same work must be repeated before each final examination. If he fails on a single branch, he is re-quizzed and comes up a second time. All of this for his diploma; then special quizzing for hospital-appointments; and finally, the last and most feared of all, the State Board!

Let us now glance for a moment at the student of law. In some of our schools he has but a single lecture a day, and is at liberty to spend the remainder with a preceptor or in an office. In some schools he has three lectures a day for five days a week. About equal to this are the three daily lectures of the theological student. In the high school, academies, and literary colleges, three recitations a day form the maximum requirement. Compare this with the minimum work of the medical student, who spends between sixty and seventy hours a week in actual, indispensable work. Of all students, the medical student is the only one who has no Sabbath.

And now, what of the final result? Does the law-student fail to get his diploma? Does the theological student fail? Either may fail, but only when extremely lazy, or under grave charges of misdemeanor. It is, indeed, rare that the entire class is not graduated. Very different is the result in our medical schools. In these 10 per cent. at least of every graduating class fail to get their degree; 10 per cent., after paying for three courses of medical instruction, three years' maintenance, and three years' loss of time.

Why, it may be asked, do so many fail?

One fruitful cause of failure is the utter unfitness of the student for his work. This should be ascertained at the preliminary examinations, which in medical schools are notoriously farcical. Think of "throwing" a man at his final examination because he cannot spell or write grammatically! What earthly likelihood is there that a student will pass the severest possible examinations on a score of scientific subjects when his early advantages are too meager and too imperfect to gain him entrance to the high school?

A second reason for failure is that the professor knows little or nothing of the student before he appears before him for his final examinations. This is not so in our literary colleges. In these it is the daily, weekly, monthly, class-room work that tells, and while I have no authority for stating it, I venture the remark that any student at the highest literary college in the land might fail in the final examinations of each year, and yet receive the diploma of the college upon his honest, faithful, conscientious class-room work, and what is more, his classmates would applaud the action.

Finally, students fail from sheer exhaustion. The long hours of work, often in foul and ill-ventilated rooms; the long tension of mind, unrelieved by the slightest relaxation; the magnitude of his work, with increasing perplexities every year, and the constantly menacing horror, that after all he may fail of getting his diploma, rob him of sleep and render him almost imbecile at the moment when his faculties should be freshest and brightest. Many a man fails that two months before would have passed the ordeal triumphantly.

If the law of the State demands a four years' course of instruction at a medical school, if the law demands a diploma as the only possible passport to the Board of Medical Examiners, it seems only fair that some more legislation is needed to give the student that justice which heretofore has never been meted out to him.

At the first alumni meeting of the Jefferson Medical College, after Dr. Keen had been made professor of surgery, he narrated a conversation he had with a young man that had failed in his final examinations: "I told him that I felt guilty; that I felt that I had money that belonged to him." I presided at that meeting, and as Professor Keen sat down I said: "That is the best speech that I ever heard at an alumni meeting." There is a suggestion in this that I would commend to those who make the laws of our State. If the law compels a young man to study four years, it ought to give him some guarantee that he will be fairly dealt with. Were our medical schools compelled to refund one-half the expenses of the student who fails to get his diploma, if the schools were obliged to refund all moneys expended on lectures, the graduating class would not be reduced in numbers, but the 10 per cent. that fail at their final examinations would have some redress. Many of these would be checked at their preliminary examinations, while the deserving would get more consideration. But this is not all. Were medical schools held to a strict accountability for their courses of instruction they would soon come to a comparison of their methods with the methods of other educational institutions, and the result would be less quantity but better quality, few failures and better men.

STONE IN THE BLADDER—CHOICE OF OPERATION.[1]

BY WILLIAM H. HINGSTON, M.D., LL.D., D.CH.,
PROFESSOR OF CLINICAL SURGERY, MONTREAL SCHOOL OF MEDICINE; SURGEON TO HOTEL-DIEU, MONTREAL.

As will be readily understood from the limited nature of the subject of this paper, dealing as it does with a small section of a large question, it will necessarily be short. So much has been written within the last few years upon stone in the bladder, and the best means of disposing of it, that little remains to be said. Yet is it within the province of the hospital-surgeon to modify somewhat, for himself at least, the rules for general guidance?

The surgeon most practically familiar with the subject of stone in the bladder occasionally meets this difficulty: Not what is the best operation to be performed in cases of stone in the bladder generally, but what is the safest and best operation to be performed in *this* particular instance? Every case has its own individuality, and these are cases to which the general principles or precepts enunciated by surgical writers can with difficulty be applied. The question of age commonly comes first, and *quoad* that element, the relative advantages of lithotrity and some forms of lithotomy have been practically settled. In both directions the limits in point of age have been greatly extended by the lithotritist, and very *young children* and very *old men* are now being subjected to the crushing operation.

Contraction of the urethra, in any part of its course, is no longer an obstacle to, but a delay merely in the use of the lithotrite.

The condition of the bladder is now no longer taken so much into consideration as formerly. The rule once laid down, that unless the patient can retain his urine a certain period, say a couple of hours, he should not be subjected to lithotrity, no longer holds. My most satisfactory cases have sometimes been those in which the patient could not retain his urine five minutes, and in some instances the sufferer was obliged to wear a caoutchouc bag, into which the water trickled drop by drop.

Whatever the quality of the urine may be, there is no hindrance on that account to the crushing operation. The claim formerly put forward for the superiority of perineal lithotomy, and revived in recent years in favor of the suprapubic method in cases of renal complications, does not appear to me in either instance to be well founded. I venture to say, in general terms, that in diseased bladder, in diseased kidney, and in cases of unhealthy urine arising from either, the lithotrite is as safe an instrument as the lithotomist's knife. Nor should an attempt at the removal of a calculus by either method be delayed pending an effort—usually fruitless—to improve any of those conditions.

The limits as to the size of the stone treated by lithotrity are becoming greater and greater as instruments are becoming more and more perfected.

The hardness of the stone does not now seem to be an inseparable obstacle to an attempt at its reduction. As "coming events cast their shadows before," it is not impossible that at this meeting a Philadelphia surgeon may so instruct us to measure the force of resistance of the calculus on the one hand, and the crushing power of the lithotrite on the other, as to establish the limits within which the crushing of a calculus may be carried with safety.

But while the sphere of lithotrity is steadily extending, and that of lithotomy is becoming more and more circumscribed, there are from time to time, and, in all probability, always will be cases in which cutting must necessarily be resorted to; and then comes the question: Which of the many cutting operations should be selected? (I may here observe, parenthetically, that all cutting operations being equally practicable in any given case, the lateral method, to my mind, still possesses greater advantages and fewer disadvantages than any other. But the lateral method is not always practicable.) When an enlarged prostate or a tumor so interferes with the manipulation of the lithotrite as to make it impossible not only to seize the stone, but also to establish its size, it appears to me to be more prudent to act as if the stone were of large caliber, too large, indeed, to be removed with ease or safety by the lateral operation, and to resort at once to the suprapubic method. Although, as elsewhere noted, I have removed by this method stones of much larger size than is deemed advisable by many to undertake by the lateral method, I am free to admit that in stone over a certain size, and in stones whose size cannot be clearly made out, the suprapubic method is the better.

Having said this much, I venture to express, in a few words, a few general principles or aphorisms, most of which have already been accepted by surgeons, and to offer an additional one for your acceptance. 1. Lithotrize—and by lithotrity I mean that more perfect method, which was foreshadowed by Mercier in France, and brought to its highest perfection in America—lithotrize in all cases of adults in whom the stone is neither too large nor too hard for the lithotrite. 2. Lithotrize when the urethra is, or can be made, sufficiently capacious for the crushing instrument. 3. Lithotrize in children, however young, when the urethra permits the passage of a crushing instrument. 4. In

[1] Read at the meeting of the American Association of Genito-urinary Surgeons, held at Washington, D. C., May 30, 1894.

very young children the cutting operation is preferable. The precise age at which lithotrity is possible must vary with the caliber of the canal, which in young children varies greatly in its capaciousness and in its capacity. When the urethra in the child is not and cannot be made fit to receive the lithotrite, the cutting operation to be chosen is the lateral method. 5. In cases of stone in the aged, when enlarged prostate not only prevents the stone being seized, but its dimensions being ascertained, one should act as if the calculus were of large size and incapable of reduction, and proceed to operate by the suprapubic method. I must confess that I have been forced to this conclusion by the consideration of two somewhat untoward cases of recent date, in which, prevented by an enlarged prostate from grasping the calculus, I adopted the lateral method, and found it impossible in both cases to complete the operation without reducing the volume of the stone before extraction—a procedure which it is always advisable to avoid when possible. In both these cases the suprapubic method would have been better. The consideration of these cases has led me to reconsider certain rules I ventured several years ago to lay down, to influence surgeons in the choice of operation, and it is the view then expressed I should wish, with your consent, to modify.

Surgical interference in cases of calculus in the female remains the same. The method employed years ago by Erichsen, Thompson, and others, has since been followed, and stones of large size are removable generally *per vias naturales*, after dilatation. In exceptionally large calculi the lithotrite commonly suffices; and rarely, indeed, is the surgeon obliged to resort to the knife in the case of females.

NEW DEVICE.

AN IMPROVED FRACTURE-BOX

For the Repair of Injuries of the Lower Extremities Requiring Extension and Counter-extension.

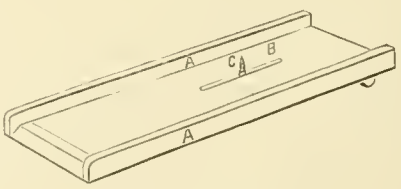
By JOHN B. BROOKE, M.D.,
of Reading, Pa.

There is, perhaps, no more successful method of treating fractures of the lower extremities in their continuity than by the ever-ready sand-bag, pulley and weight, which have largely supplanted the more pretentious measures adopted years ago, including the various appliances for extension and counter-extension from the axilla and perineal appliances, which were always more or less painful, difficult of adjustment, particularly in compound injuries, and always tedious to be borne for any great length of time. Whilst, however, this apparatus answers the purpose for which it is employed, and generally effects most admirable results, it is nevertheless, by its size and weight, inconvenient to handle, requires frequent adjustment, and, in hot weather, adds greatly to the warmth and discomfort of the patient, necessarily increasing nervous irritability and restlessness, and, as a consequence, protracting the recovery. Besides, to make the treatment effective, the sand-bags on the inside and outside of the limb must be firmly adjusted and strapped to it above and below the knee. Holding it thus in a vise as it were, extension is made along the leg, but not always with success, for no one who has had much experience with this form of dressing can fail to recall many instances in which it was almost impossible to keep the foot from deflecting to one side or the other. To this objection, too, must be added that of increasing greatly the weight of the extremity by the attachment to it of the bags, and necessarily requiring increased weight to effect the desired extension. This excessive weight, besides producing abrasions of the instep and heel, with the attendant pain and soreness, adds, also, to the strain upon the adhesive strips, creating irritation beneath them. There is a still further objection. By the combined weight of the sand-bags and limb, the bed, unless a very hard one, will, immediately under them, become so much pressed down into a hole, if you please, that it will act as an obstacle to the sliding forward of the leg and the consequent separation of the fragments.

To do away with the objections to the use of the sand-bags in whole or in part, I present to the profession an improved fracture-box, which I devised some months ago whilst treating an intra-capsular fracture of the femur. It has been in very successful use since then. It presents the following advantages over the sand-bag treatment: It is, under all circumstances, easily adjusted to the injured limb; it is not hot and confining; there is less pain and uneasiness in extension in consequence of less than one-half the weight being required by its use for a given amount of traction; injuries are readily examined, and above all, the surgeon has perfect control of the position of the limb.

In the construction of the box little skill is required, the only care demanded being in the proper selection of well-seasoned wood, particularly for the piece on which the box proper rests and rolls. Unless this is of the best material it will warp, and prevent the easy to-and-fro motion of the box, upon which the success of the whole apparatus depends. I may add that the bed upon which the patient rests should be of hair, and the bedstead at least one foot longer than those usually made for hospital use. With these precautions the fracture-box will always be firm, and the traction upon the limb at the best.

Fig. 1.

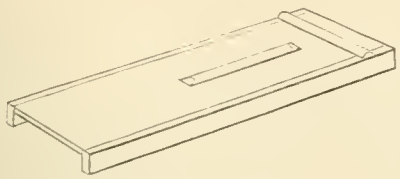


Upper aspect of track.

This improved fracture-box consists essentially of two parts. The first, as shown by Figs. 1 and 2, is nothing but a flat board, 8 x 22 inches, and a half-inch thick, guarded on the long sides by a strip one-quarter inch

thick by one inch broad (A, Fig. 1), to keep the box properly in place and to allow it to move freely on its base. This latter is perforated in its center by a slot, B, six

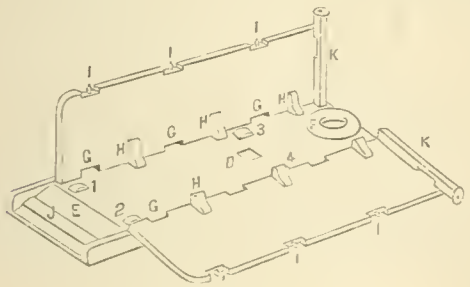
FIG. 2.



Inferior aspect of track.

inches long, and wide enough to admit of an inch screw (C, Fig. 1), which, entering a little block of lignum vitæ (D, Fig. 3), confines the box loosely to the base. This latter, at its back end, is slightly bevelled, to afford greater ease to the limb. The box proper (Fig. 3) con-

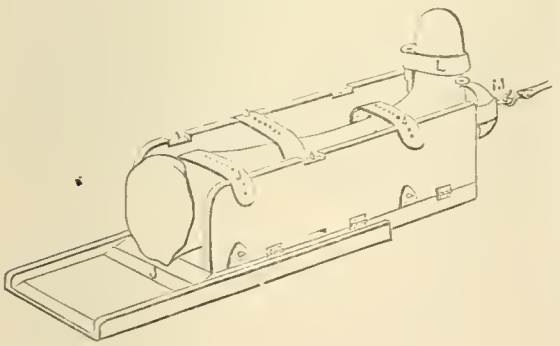
FIG. 3.



View of fracture-box, open.

sists of three pieces, viz., a bottom board one-half an inch thick, and large enough to run easily within the sides of the base. This is also bevelled, as seen at E (Fig. 3), in continuation of the base, and is perforated by four openings for rollers, 1, 2, 3, 4. The front end

FIG. 4.



View of fracture-box, extended.

has a circular opening two inches in diameter, which is covered rather loosely by a piece of chamois leather, and surrounded by a hair cushion, F, of the same material, to receive the heel and thus enable it to move the box when the weight is applied to the leg. The sides of the box are 5 by 19 inches, hinged to the bottom board and notched at the base, as at G, G, G, to admit of the passing of the straps to confine the limb. As these sides sustain the whole inward pressure of the straps, there are small blocks (H, H, H, Fig. 3), firmly glued to them to antagonize this force. At the top of the sides, and on a line with the lower notches, are similar ones to keep the straps in position and to receive the turned pins, I, I, I, made of steel or brass, which hold the straps and thus do away with the use of hooks or buckles. To avoid the pinching of the skin when the box is drawn back, a doubled strap of chamois leather is placed on the bevelled edge (J, Figs. 3 and 4). The posts, K, K, firmly fastened to the front of the sides of the box, are topped by pieces of copper—pennies answer an excellent purpose—turning eccentrically about a screw, so that the guiding strap of the foot (L, Fig. 4), may be removed at will without opening the buckle.

The straps are of soft leather, perforated at one end by one hole the size of the pins, and at the other by a number to admit of proper adjustment. Over each of these a pad slides so that pressure upon the limb can be applied when desired.

The play of the box is six inches, as indicated by the length of the slot in the base. In conclusion, I may add that the free ends of the traction plaster-strips pass around a segment of a ball 2 by 3 inches, the eyed screw, to receive the hook of the extension cord (M, Fig. 4), passing through the plasters, and into the ball, thus confining them the more firmly.

MEDICAL PROGRESS.

A "Human" Ostrich.—EVE (*British Medical Journal*, No. 1740, p. 963) has reported the case of a man, forty-three years old, who came under observation presenting symptoms of intestinal obstruction and peritonitis. The condition was so grave that local anesthesia was induced by means of cocain and the abdomen opened. The cavity was found to contain a large quantity of fluid feces, while the intestines were injected and in places matted together by recent lymph. In the ileum a perforation was found containing a piece of tin about an inch square, and a short distance beyond was a second perforation from which protruded a metallic hook bent upon itself, and which was with difficulty removed. Attached to the hook was a strip of leather extending for some distance into the bowel, but which could not be freed. A short distance below this an intussusception had formed. Several feet beyond the perforations the bowel was found to be attached in the right flank, where it was distended and closely packed with some hard substances feeling like coins. The condition of the patient failing, the two perforations were united by an incision, and the opening attached to the incision in the abdominal wall. Despite active stimulation death ensued, and upon post-mortem examination the ileum beyond the artificial anus was found stuffed for a distance of eighteen inches with foreign bodies variously mixed with strips of paper and including pieces of cork, tin-foil, coins, an iron ring, clay pipe-stems, a bullet, a rubber ring, pieces of leather, and some other things. The stomach and esophagus, as well as the large intestine, were in good condition. Upon inquiry after the operation it was learned that the man was, as a means

of livelihood, in the habit of swallowing coins, pieces of tin, paper, cork, swivels, watch-chains, keys, tacks, nails, rubber, purses, and sundry other articles, many of which were safely passed per rectum.

Typhoid Fever complicated by Diphtheria; Tracheotomy; Recovery.—GAYTON (*Lancet*, No. 3688, p. 1131) has reported the case of a boy, eight years old, who for five days had been complaining of pain in the abdomen and head, and presented a temperature of 104°. The abdomen was distended, but not tender, and there were no spots. The tongue was dry and fissured; a few râles only were to be heard over the lungs. The temperature kept high and was of a distinctly remittent type. Spots first appeared on the eighth day. The bowels throughout were rather confined. On the eighteenth day a harsh cough and hoarseness were observed, and a day later there was marked stridor. The patient was now placed in a steam tent and hot poultices applied to the throat. Two days later the lower ribs were slightly retracted. The fauces were inflamed, but no membrane could be seen. As the breathing and retraction became rapidly worse, tracheotomy was performed. No membrane was encountered, but the dyspnea was greatly relieved. The urine contained a trace of albumin. A day afterward some membrane was removed by feathering, and later a large cast of the trachea came away, the wound being exceedingly septic and presenting a foul-smelling discharge. A large mass and several smaller pieces of membrane were removed during the next few days. Thereafter the wound was cleaner, and as the trachea presented a natural pink color the tube was temporarily, and on the following day permanently, removed. A week later the albuminuria had disappeared and uninterrupted improvement ensued.

A New Clamp for Repairing Intestinal Injuries.—At a recent meeting of the Chicago Medical Society, LARKIN (*Chicago Medical Recorder*, vol. vi, No. 5, p. 337) demonstrated a clamp with which he claimed that he could securely close a stab-wound or bullet-wound of the intestine in fifteen seconds. The instrument is made of brass, though it may be made of any other metal or of hard rubber. It consists of two semicircular jaws that act upon two hinges. When it is open and ready for use its form is nearly circular; when closed and in position its jaws come together, and the several sharp, needle-pointed teeth in either jaw fit into corresponding holes countersunk into the opposite side. The jaws are held together by means of a steel spike that is accurately notched to receive a sharp spring on either side. This ratchet is for the purpose of locking the jaws at any point corresponding to the thickness of the gut operated upon. Practically, no experience is needed for the application of the clamp; no needles are required; no knife is used; no extra wound is made, and no false passages are created.

THERAPEUTIC NOTES.

Strychnin poisoning, with Acute Nephritis and Ascending Motor Paralysis.—PERRY (*Birmingham Medical Review*, vol. xxxv, No. 189, p. 293) has reported the case of a strongly-built man, twenty-five years old, who attempted to commit suicide by taking vermin-poison. When seen, general spasms were occurring every few minutes, and, although not violent in nature, were excited by touching the patient or by movement on his part. The stomach was washed out, and tannic acid introduced by means of a stomach-tube and a subcutaneous injection of ten grains of chloral was given. Within five hours after taking the poison the spasms had passed off, and the patient was able to swallow within four hours after coming under observation. On the following day the urine was withdrawn by means of a catheter, and was found to contain albumin and blood, and hyaline and blood casts. There was also aching pain and slight tenderness in the lumbar region. Vomiting occurred after the taking of food, and persisted for four days, until death took place. Hiccough was also present from the second day, and persisted intermittently until death. On the fourth day the patient complained of complete loss of power in the lower extremities, and of much loss of power in the upper extremities, which he had first observed the night before. Successively the extremities, as well as the intercostal muscles, became completely paralyzed. The knee-jerks and the superficial plantar reflexes were lost; the abdominal and epigastric reflexes were preserved. The pupils were equal, and reacted to light and in accommodation. The general condition of the patient steadily became worse, and the dyspnea more pronounced, and death took place amid the symptoms of asphyxia. Consciousness was preserved throughout. Shortly before death a return of movement was observed in the upper intercostal muscles. Upon post-mortem examination the kidneys were found in a condition of acute inflammation. No lesion was found in the spinal cord.

To Prevent Prolapse of the Iris in Simple Extraction of the Lens SMITH (*Archives of Ophthalmology*, vol. xxiii, Nos. 1, 2, p. 85) has, in sixteen cases, given a hypodermatic injection of one-quarter grain of morphin, after the toilet of the lens and the instillation of a one-grain solution of eserin into the conjunctival sac. After a few minutes the patients are put to bed, and there kept for from twenty-four to forty-eight hours. Eight hours after the first injection a second one is given, and on the following morning a third. The pupil is thus kept contracted for from thirty-six to forty-eight hours or more. For the discomfort that ordinarily follows the operation there is substituted tranquillity, while cough is additionally subdued, and involuntary traction of the recti or orbicularis muscles is avoided.

For Asthma.—

℞.—Chloroformi . . . . . f℥j.
Ætheris . . . . . f℥jss.
Syr. acaciæ . . . . . f℥j.
Tinct. cardamom. co. . . . f℥j.—M.

S.—A teaspoonful every half-hour until relief is obtained. *L'Union Méd.; Med. Press and Circular.*

For Tic Douloureux.—

℞.—Ammonii chloridi . . . . gr. xx.
Butyl-chloral hydratis . . . gr. v.
Glycerini . . . . . ♏x.
Aquæ chloroformi . . ad f℥ss.—M.

S.—Repeat three times at intervals of two hours.
Practitioner.

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SATURDAY, JUNE 16, 1894.

WHO SHALL DECIDE WHEN LAWYERS DISAGREE?

By a recent decision of the Supreme Court of Pennsylvania a notorious political bully, who had been tried and convicted of killing a man at the polls in this city, and who was serving his term in the Penitentiary, was released from confinement and granted a new trial because, in the opinion of that august tribunal, the trial-judge and the district-attorney in the lower court had committed grave error in the conduct of the case. It seems that the trial judge, apparently at the instigation of the district-attorney, had refused to admit vital evidence as to the *res gestæ*, among which were the testimony of the police-surgeon and the dying declaration of the murdered man.

To the scientist, whose methods aim at precision by the due weight of all evidence, this technical error in the case of a prisoner on trial for his liberty and reputation appears to be radical and deplorable. In his arraignment (for such it is) of the lower court, the learned judge emphasizes the fact, although he does not state it in words, that the officials of our courts can fail to agree upon the simplest details of a street fracas, the determination of which does not require scientific precision or learned attainments, and which yet turns the scale, held in the hands of a justice too often, alas, both blind and ignorant, against the fate of a prisoner.

To the medical expert this episode points a moral and supplies an argument. He is accustomed to hear in the courts, without cessation, the claim that expert testimony is weakened by the contradictory opinions of the experts themselves. This claim is reverberated through the public press, and affects injuriously the credit of experts in public opinion. Too often the claim is allowed to go unchallenged; in fact, there exists a feeling in the medical profession (which is conspicuous above all other professions for hunting out and correcting its own errors) that there is an element of truth in it, and that it is unfortunate and ought to be remedied. But we do not hesitate to say that usually the claim is grossly exaggerated, and that the true answer to it lies in the fact that the fault is with the courts and their methods, because, as in the case of the political criminal just liberated on a quibble, they fail to apply an intelligent test to determine the quality of the testimony submitted to them. If they are not competent to decide upon the merits of the evidence of a ward-fight (in which a man is merely killed in open daylight by a knife-stab), how can they decide upon the merits of testimony based upon accurate scientific knowledge of some of the most profound questions in mental pathology? If they require the correction of the Supreme Court in the matter of a police-surgeon's testimony, how much more must they need it in the matter of that of an expert alienist? If they deserve the castigation of a reversed judgment because they decline to listen to the dying utterances of a murdered man, how much more must they deserve it for refusing to listen to the ravings of an insane one?

When WEBBER, the delusional lunatic, who killed a South Street jeweller in this city, had been convicted on the testimony of a police-officer and a police-magistrate, who said that they believed him to be sane, in the face of the testimony of experts that he was radically insane, a judge of the Supreme Court of the State, who is now Chief Justice, wrote an opinion that the lower court had erred, and based it largely upon the fact that the expert testimony had practically been ignored. After seven years WEBBER lies in jail unhung to-day, but under condemnation of death, as though the law shrunk from recognizing the truth about him, and yet dreaded to hang him!

The case of Prendergast, the Chicago assassin, is an extraordinary example of the uncertainties and waverings of the legal powers. According to the best expert testimony, as we now have it, Prendergast is an undoubted and hopeless delusional lunatic, who committed his crime under the influence of a characteristically insane delusion. Under the extraordinary pressure of the newspapers, which are always remarkably unintelligent and prejudiced on the subject of criminal insanity, and amidst loud popular applause, which sounded like the brutal demonstration in an old Roman amphitheater, the assassin of the mayor was convicted and condemned. We might have supposed then that all but the last act of the tragedy had been played. But already we witness the spectacle of one judge undoing what another judge had done, and of one honest lawyer for the prosecution withdrawing from the case because, in his conscience or in his stomach, he had had enough of prosecuting a lunatic. What remains to be done in the case the medical world must wait to see, but probably no expert can be found so rash as to cast a prognosis of the fate of either the lower court or the prisoner.

But while it is most difficult to obtain in our courts a fair recognition of psychiatry, or a unanimity of judgment on the subject of insanity, it is remarkable how promptly both courts and lawyers resort to the defence of insanity when it is convenient and popular to do so. The most glaring abuse of the defence of insanity ever witnessed in this country was perpetrated not by experts, but by a court. It was in the case of young Nutt, who was tried in this State for killing in cold blood the seducer of his sister and the slayer of his father. There was not a scintilla of honest evidence of insanity in the assassin, but the public and the court were with the prisoner—and no other defence could be concocted. He was acquitted.

This readiness to accept the flimsiest evidence of insanity is shown strikingly sometimes when property, not life, is concerned. The old English law was more solicitous about property than about life, and our courts and juries, which have received its traditions, are often credulous to the last degree about the mental incapacity of the owner of an estate. A jury that would probably reject the highest expert testimony on the alleged insanity of a delusional criminal will promptly declare *non compos*, in the face of expert testimony to the contrary, an old woman who gives away part of her estate to the churches. This has happened recently in this city before a commissioner *de lunatico inquirendo*. The object of the inquiry was the mental capacity of a woman over seventy years old, who showed no mental changes except the slight loss of memory incident to old age. She had no lineal heirs, but because she chose to give during her lifetime some of her money to benevolent objects instead of to a brother and sister, who had no claim whatever upon it, the jury decided that she was incapacitated.

If it be true, as Blackstone has said, that gentlemen of the faculty of physic can derive no profit from the study of law, the converse is not so apparent; for it is clear that lawyers, who disagree about the elementary rules of evidence, and who disregard the teachings of science, could derive from the study of pathology an exactness in the determination of the value of proof that might save them sometimes from mortifying encounters with the Supreme Court.

EDITORIAL COMMENTS.

Attending Physicians and Consultation-fees.—An esteemed correspondent recently inquired:

"In consultations, is not the attending physician entitled to a consultation-fee in addition to his ordinary visiting-fee?"

We answered, "Yes."

Our correspondent writes again, stating that some differ with us in opinion, and requesting a more elaborate exposition of the matter. We fail to see how there can be any room for difference of opinion, so far as concerns the *right* of the attending physician to additional compensation for additional service. The expediency of the charge is a matter for consideration in each individual case, and both business-sense and more generous sentiment may, in some cases, induce the physician to forego his right. As a rule, however, physicians are much more likely to err on the side of undercharge than overcharge. The whole visiting-fee system is ridiculous, and no other body of professional men would submit to it. The physician should charge, as does the lawyer or the architect, in proportion to the importance of the case, the skill possessed and required, and the time, labor, and anxiety involved. Surgeons, at least the tip-top ones in city and country, do this for operative work, and physicians should do the same in medical cases. A fee that may be large for the treatment of a case of simple diarrhea may be ridiculously small for a grave case of typhoid fever or pneumonia. A single visit by a man who is able to diagnosticate a case—let us say, of concealed aortic aneurism—is worth more than hundreds of visits by a man who mistakes the case—let us say, for laryngitis. The man who removes a diseased uterus has not rendered any greater service than the man who restores to

function a diseased lung, and the latter should be equally well paid.

However, so long as the idiotic custom of charging by visit exists, physicians are entitled to the full payment such a custom permits. A true consultation is undertaken for the benefit of the patient. As the term implies, it is the meeting of two (or more) physicians for mutual interchange of opinion. Both the attending physician and the one summoned to his assistance, are therefore *consultants*, although technically, the term may be restricted to the latter. They may be, often are, of equal ability and authority. Sometimes the attending physician is the superior. The attending physician gives more time to the consultation than does the consulting physician; for he remains after the latter has left the house. Like the consulting physician, he comes at a fixed hour, and when a question of convenience arises as to the hour, he is the one to suffer any inconvenience that may be necessitated. He assumes the greater responsibility, for in case of irreconcilable difference of opinion, it is his opinion that must prevail if he remains in attendance. He is, therefore, justly entitled to a consulting-fee, because he consults and because this consultation involves additional time and trouble upon his part.

The Training of Nurses for the Care of the Insane.—By a fortuitous circumstance the opportunity was given DR. WEIR MITCHELL to supplement his words of sharp criticism and valuable counsel addressed to the American Medico-Psychological Association with others of kindly advice to the graduating class of the Training-school for Nurses of the Philadelphia Hospital. He pointed out among other things the demand for nurses specially trained for the care of the insane, and insisted upon the necessity for a thorough general training antecedent to the special training. Both are not ordinarily to be had in one institution, but the opportunity peculiarly exists at the Philadelphia Hospital by reason of the association of the insane department with the general hospital, both being under common control, and particularly on account of the existence of a splendid, well-directed, and well-disciplined training-school. It was recommended that for the education of nurses for the care of the insane at the Philadelphia Hospital one year be spent in the general hospital and two years in the insane department. The expense attendant upon such a course would be more than made good by the services rendered, and, besides, the community would be provided with skilled assistance valuable beyond estimation. It is not enough that such a nurse be merely decorated with a special uniform. She should possess, besides, a degree of intelligence rather above than below the average, for she would be expected to observe accurately, to record carefully, and to administer faithfully; and she would have to be familiar with the nomenclature both of disease and of therapeutics. She should be able to learn when to oppose, when to yield, when to deny, when to accede, when to contradict, when to agree, how to distract attention, and how to break morbid habits, and the value of replacing vicious mentation by physical action. She must be thoroughly familiar with the technique of special therapeutic measures, such as baths, feeding, the subjugation of the unruly, the cheering of the depressed. A sharp distinction is to be drawn between the attendant and the nurse. It must thus be perfectly clear that an excellent opportunity for good exists at the Philadelphia Hospital that seems hitherto to have been too much neglected, and that should not be lost. A school of training for nurses for the care of the insane would be at once a benefit and an economy.

Recovery from Toxic Doses of Opium and its Derivatives.—So variable are the results that follow the ingestion of bodies of recognized toxic activity that much caution must be exercised in assigning the place of an antidote to any other body that appears so to act. There are obvious difficulties in determining what shall be considered a toxic dose. This will necessarily vary with many conditions, both individual and general, such as idiosyncrasy, tolerance or habituation, age, sex, the condition of the stomach, the facility of absorption, the state of the circulation and respiration, the secretions and excretions, and the general health. While much interest attaches to the recent observations that seem to indicate that potassium permanganate acts as an antidote to opium and its derivatives, it may be well to withhold a final opinion in this relation until a growing experience shall have confirmed or demonstrated the error of such a conclusion. Recovery from enormous doses of opiates does sometimes occur under other treatment. Such a case is recorded in the *Lancet* for March 17, 1894, p. 668, by Dr. Percy Pope, who was called to treat a servant girl, nineteen years old, who had, with suicidal intent, taken hypodermatically an amount of morphin estimated at twelve grains, and in whom recovery was brought about by active treatment. When seen, a few minutes after having taken the poison, the girl was stuporous and drowsy, and the iris was so profoundly contracted that the pupils were not discernible. The conjunctival reflex was absent for some twelve hours, and the eyes appeared glassy and dull. The treatment consisted in the administration of atropin, of which 4 grains were given in the course of twelve hours, in doses of gr. $\frac{1}{20}$ at short intervals, without inducing any change in the pupils; the employment of galvanism, the application of wet towels, the injection of cold coffee, forced exercise, and artificial respiration. Symptoms of improvement manifested themselves in the course of twelve hours, but thirty-six hours elapsed before all dangerous symptoms had been dissipated.

The Difference between Copyrights on Books and Patents on Instruments.—Our respected friend, DR. LEARTUS CONNOR, takes issue in the *Journal of the American Medical Association* for June 2d with the contention of THE NEWS that there is a radical difference between the copyrighting of books and the patenting of instruments. He contends that both instruments and books equally instruct, and that their producers should therefore be equally rewarded and protected. Dr. Connor, however, evidently overlooks the fact that anyone may utilize the information contained in a copyrighted book, and even impart it to others, or go still further and incorporate it into a book of his own preparation; while none can use the patented instrument or utilize the ideas that enter into its construction without purchasing the consent of the patentee. Further, the patentee of

an instrument can arbitrarily make its price of sale so high as virtually to prohibit its use by others; or he might, if he chose, even not offer it for sale at all, for the purpose of retaining the privilege of its exclusive use, as did the Chamberlens with the obstetric forceps. The possibilities of evil from such opportunities must be perfectly obvious. The writer of a copyrighted book unreservedly *sells* his ideas, while the inventor of a patented instrument only *loans* his conditionally. The true parallel is not between a patented instrument and a copyrighted book, but between a patented instrument and a patented or copyrighted medicine. We have always understood Dr. Connor to oppose the latter.

The Spelling of Chemic Terms.—For the information of numerous correspondents and of others who may feel an interest in the subject, we reproduce a few of the rules for the spelling and pronunciation of chemic terms, adopted in 1891 by the American Association for the Advancement of Science, as a result of labors extending over a period of four years. The final *e* is dropped from words heretofore terminating in *ide* and the syllable is pronounced *īd* (as chlorid, iodid, hydrid, oxid). The final *e* is also omitted from the names of all elements and compounds that formerly terminated in *ine*, except doubly unsaturated hydrocarbons, and the syllable is pronounced *ĭn* (as chlorin, iodin, bromin, amin, anilin, quinin, morphin, caffein, cocain). *F* is used instead of *ph* in the spelling of sulphur and its derivatives (as sulfur, sulfite, sulfuric). *Aluminum* is preferred to *aluminium*; the dipthong is not used in *cesium*. The termination *ol*, in the case of specific chemic compounds, is used exclusively for alcohols, and when so used is never followed by a final *e* (as glycol, phenol, cresol, thymol).

SOCIETY PROCEEDINGS.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Eighth Annual Meeting, held at Washington, D. C., May 29, 30, 31, and June 1, 1894.

(Continued from p. 620.)

THIRD DAY—MAY 31ST.

THE Secretary read for DR. EDMUND E. KING, of Toronto, Canada, who was absent, a paper on "Excision of the Initial Lesion," in which the ground was taken that excision of the chancre, if done sufficiently early, will abort syphilis. This opinion was based upon cases personally observed. In some of these, two years had elapsed without the appearance of any secondary symptoms. The belief was further expressed that if the secondary symptoms have appeared, excision of the chancre will still moderate their severity. The following conclusions were reached: 1. Early excision of the chancre—that is, within a few hours after its appearance—will abort the disease. 2. Excision of unhealed chancres will moderate the subsequent secondary manifestations. 3. It is the cleanest, least painful, and most scientific method of treating the lesion.

DR. EDWARD MARTIN, of Philadelphia, read a paper on "Epithelioma of the Penis." Regarding the etiology, phimosis is almost universally acknowledged. Traumatism is also an occasional factor. Until quite recently direct infection has been denied. Evidence is accumulating, however, that tends to call for a modification of this view. Syphilis is occasionally cited as a cause, but the etiologic relation is very problematic.

Operation in the earlier stages gives every prospect of permanent cure. Later, when the disease has involved the lymphatic glands of the inguinal region, or has so infiltrated the organ that the involved tissue cannot be entirely eradicated, operation still adds to the comfort of the patient, and prolongs life. Lymphatic enlargement may be either metastatic or inflammatory; in the latter case it will subside after operation.

It is advised that in every case, a microscopic examination should be made, to definitely settle the diagnosis and to determine whether or not all diseased tissue has been removed. If complete removal of the cavernous bodies is performed, the testicles should also be extirpated. The inguinal lymphatics should always be removed, whether enlarged or not. The two features emphasized, and which were new, are the possibility of the direct contagiousness of epithelioma, and the recommendation to remove the inguinal glands.

DR. R. W. TAYLOR, of New York City, read a paper on "Seminal Vesiculitis," in which he maintained that the disease is usually due to gonorrheal infection. The early symptoms of inflammation of the seminal vesicles are very similar to those of inflammation of the deep urethra. The patient feels a dull, throbbing pain deep in the pelvis; pus and blood may or may not appear in the urine. In cases of acute deep urethritis these are always present. Rectal examination will insure a recognition of the condition if present. The vesicles can be felt and will be found painful on pressure. Frequent noctural emissions, with or without erection, and emissions upon the least provocation constitute a marked symptom in many cases.

Resolution may take place, or the inflammation may terminate in abscess-formation. This, if unrelieved, may extend in different directions and may rupture into the rectum, the bladder, or the peritoneum. Cases have also been reported in which the abscess has reached a very large size without rupture. In one instance, ten pints of fluid were withdrawn. Seminal vesiculitis frequently complicates epididymitis, and in cases of the latter condition, if the symptoms do not subside in the usual time, involvement of the seminal vesicles may be suspected and should call for digital exploration.

In tuberculous disease of the vesicles, the symptoms are all of moderate character. There will be found swelling and infiltration of the organs, to be detected through the perineum and by rectal examination.

In the diagnosis, the most valuable information will be obtained by palpation with the finger in the rectum. The bladder should be full at the time of the examination; the vesicles are to be felt beyond and on either side of the prostate. The normal vesicles should be familiar to the touch of the surgeon; any departure from health will then be readily discernible.

The treatment should be such as is suitable to phlegmasic processes generally. Several leeches may be applied to the perineum, and cold water injected into the rectum, or the bowel may be packed with ice if agreeable to the patient. Opium will usually be required. If an abscess forms, an incision may be made in the peri-

neum, over the most prominent part of the swelling, or the pus may be aspirated; or in acute abscess, the incision may be made through the anterior rectal wall, as recommended by Dr. Gouley. Dr. Fuller recommends, in mild cases, emptying the cavity by "milking or stripping" the vesicle with the finger in the rectum. Dr. Taylor contends, however, that the vesicles cannot be satisfactorily emptied by any process of stripping.

In the discussion, DR. MARTIN referred to the difficulty of palpating the healthy seminal vesicles. In the treatment of chronic cases, great perseverance is necessary, as by any method of treatment improvement is exceedingly slow. He uses rectal irrigations of water as hot as can be borne. DR. BANGS and DR. HAYDEN concurred in the difficulty experienced in detecting the healthy vesicles. DR. WEIR, of New York, described the method of opening abscesses of the vesicles from the perineum, and of removing the glands in cases of tuberculous involvement.

DR. JOHN P. BRYSON, of St. Louis, read a paper on "The Question of Surgical Interference in Tuberculous Kidney." Of one hundred and seventy-four cases of tuberculous disease of the genito-urinary organs, which he had observed, the kidney was involved in but eighteen instances. In some of the cases of renal disease, the evidence was first manifested in the lower urinary tract. Dr. Bryson takes a conservative position in the surgery of the kidney. In abscess or in stone of the kidney, the surgeon's plain duty is to remove the offending material. But to open and drain a tuberculous focus or other disease that is apt to become generalized is not considered a justifiable procedure.

In the discussion, DR. BANGS said that his experience had led him to great conservatism in genito-urinary tuberculosis. In involvement of the bladder, mild palliative treatment is unquestionably the best. Much may be hoped for from sending the patient to a proper climate, and from a rigid attention to hygiene.

DR. EDWARD L. KEYES, of New York, expressed his impression that in uro-genital tuberculosis more medical treatment and less surgical treatment is required. Similar opinions were expressed by DRS. BELFIELD, BELL, and CHISMORE.

In closing, DR. BRYSON stated that in his experience he had not observed albumin or casts in cases of renal tuberculosis, and he should regard the presence of these in the urine as evidence against tuberculosis.

DR. F. TILDEN BROWN, of New York City, presented a "Brief Report of a Case of Cystitis and Pyelo-nephritis due to the Colon-bacillus, requiring Nephrectomy." A man, aged forty-two years, was treated for cystitis following the introduction of a steel bougie of large caliber. He had a relapse on the next instrumentation. Some time later he began to present symptoms of pyelo-nephritis: lumbar swelling, pus in the urine, chills, etc. Nephrectomy was performed. Cultures made from the removed kidney and from the urine drawn at different times by a sterilized catheter, invariably yielded pure cultures of the colon-bacilli.

FOURTH DAY—JUNE 1ST.

DR. ROBERT W. TAYLOR, of New York City, described a case of "Mixed Malignant Tumor of the Testicle."

The patient, twenty-seven years old, had had a chancre and gonorrhea, and had also been struck on the affected gland. On admission to Bellevue Hospital the tumor was as large as two fists, having doubled in size in two months. It had been perfectly smooth, but had recently become fungating upon the posterior surface. Microscopic examination showed the growth to be composed of cartilaginous, adenomatous, carcinomatous and sarcomatous tissue, and to be cystic in portions. The case is interesting on account of the age of the patient and the rapidity of growth.

In the discussion DR. BRYSON called attention to the observation of Jacobson, that tumors, which in other portions of the body are called benign, always become malignant when they attack the testicle. Dr. Bryson has also observed that, in administering the salts of iodin in cases of malignant disease, there is an increased tendency to hemorrhage. DRS. BRYSON, KEYES and BELL do not advise removal of the inguinal glands if the tunica vaginalis has not been broken through.

DR. JAMES BELL, of Montreal, Canada, reported "Two Cases of Syphilis having a Bearing on the Question of the Period during which the Disease is Communicable." The first of these was in a man who contracted a characteristic chancre, and was under careful anti-syphilitic treatment for two years and four months. The symptoms disappeared, and throughout the treatment progressed satisfactorily.

At the end of two years and six months the man married. He indulged freely in wine and indigestible food at the wedding. A few weeks later the patient's wife showed evidences of syphilis, which disappeared on anti-syphilitic treatment. On discontinuing treatment the symptoms returned, iritis being the most prominent. These again disappeared under treatment.

The second case was that of a man who contracted a chancre on the eve of marriage. The wife ceased menstruating after the marriage, and soon morning vomiting appeared. She was given anti-syphilitic treatment and has never shown any symptoms of syphilis. The child was born at full term, and though nine months have elapsed, its health remains perfect, and no evidence of inherited syphilis has appeared.

In discussing these cases, DR. TAYLOR called attention to the necessity of taking into consideration the possibility of an extra-genital chancre. Further, while cases of pertinacity of the infective principle are on record, Dr. Taylor is led to doubt the facts as stated in some of the cases. It is well-known that the blood is the least virulent of the various tissues of the body.

DRS. KEYES and BANGS expressed the conviction that a person affected with syphilis should not receive the consent of his physician to marry until three full years had elapsed, and then only provided that he shall have been under careful treatment and observation during this time. DR. TAYLOR said he would be inclined, in some cases, to give permission at the end of two years.

For Singultus, FESSLER (*Wien. Aerztl. Central.-Anz.*, 1893; *Memorabilien*, xxxviii, 3, 189) recommends the induction of vomiting by irritation of the palate and vault of the pharynx. The essential element is the contraction of the abdominal muscles and of the stomach.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Sixteenth Annual Session, held at Washington, D. C., May 30, 31, and June 1, 1894.

(Continued from p. 622.)

SECOND DAY—MAY 31ST.

DR. THOMAS R. FRENCH, of Brooklyn, read a paper entitled "Observations on Some of the Results of Cutting Operations on the Nasal Septum." He confined his remarks to two conditions, perforations and membranous adhesions. Our present methods of correcting septal deformities are not always successful. He asked: Are there not, then, conditions under which perforation of the cartilaginous septum can be made a perfectly justifiable procedure? He believes that with proper after-treatment such a perforation can be made without injury and with great relief when a breathway through the obstruction cannot otherwise be obtained. He excepts, however, a perforation made near the introitus of the nares, particularly in a septum bent obliquely across at both openings.

In regard to adhesions, he called attention to a cause heretofore overlooked, viz.: cut surfaces on the septum will become adherent to scar-tissue on the opposing turbinates from the previous use of the galvano-cautery. Hence before operating on the septum one should always inquire carefully into the patient's previous history as to operations inside the nose; and when both parts, septum and bone, require treatment, the septum should be attacked first. When for any reason it is necessary to operate on the turbinate first, preference should be given to the use of acids or the snare.

Doubtless, adhesions often result from saws with unprotected ends, and the unskilful use of trephines or forceps in narrow nostrils. In the use of the saw, one should begin by cutting upward, and finish by cutting downward, and whichever way one begins, the section should be finished by cutting in the opposite direction. In this way one can remove a maximum amount of tissue with a minimum danger of injury to the outer wall.

In the discussion, DR. F. H. BOSWORTH, of New York, admitted that perforations would result at times with every procedure, but they are harmless if in an antero-posterior direction, so that the incoming air does not directly impinge upon some projecting angle or edge. DR. JOHN O. ROE, of Rochester, N. Y., expressed his belief that in children only is there any danger of falling in of the nose from an accidental perforation. With his own septal forceps this accident is prevented by a screw in the handle, so as to prevent too close approximation of the cutting edges. The intact membrane on the sound side would act as a splint till healing occurred. DR. C. M. SHIELDS, of Richmond, Va., maintained that the septal thickening in these cases is a provision of Nature to prevent further bending. If it be removed, Nature reproduces it. He prefers the knife to all forms of punches, as the latter comminute the tissue. DR. W. E. CASSELBERRY, of Chicago, could not accept Dr. French's view as to adhesions resulting only when two raw surfaces are opposed. Naso-pharyngeal tumors often adhere to adjacent surfaces as a result of continuous pressure. Hemorrhage could come from the septum as well as from injured turbinated bones. DR. J. W. GLEITSMAN, of New York, said that failure to relieve symptoms after septal operations may result from the fact that the turbinated bones might be enlarged posteriorly. DR. W. PEYRE PORCHER, of Charleston, S. C., contended that iodoform-gauze is the best material for intranasal packing. He had seen sharp bleeding from the breaking up of adhesions. The paper was also discussed by DRS. M. J. ASCH, of New York; W. H. DALY, of Pittsburg; S. W. LANGMAID, of Boston, and M. R. BROWN, of Chicago. Special stress was laid by all on the fact that operations on the septum should not be undertaken unless one could be sure that the after-treatment would be effectually carried out.

DR. W. H. DALY, of Pittsburg, read a paper entitled "A Plea for Early Operation in Diseases of the Antrum of Highmore," which was based upon twenty-seven cases treated since 1882. He advocated exploratory incision (if necessary) for diagnostic purposes. As the proper site for operating, he preferred the point just above the second bicuspid tooth, where the wall of the antrum has a certain resiliency. The cheek will cover over the aperture, though particles of food will at times gain access to the antrum. A drill with a conical burr-head is the best perforator. Care should be taken to break up all the partitions in the antrum. An excellent irrigator is provided by a nozzle of proper length and shape fastened to an ordinary Davidson syringe. It is possible, however, to teach the patients to irrigate by instructing them to fill the mouth with water, and then, by a sort of bucco-lingual compression, force the fluid up through the opening. After flooding the sinus the fluid would escape through the natural opening into the nose. The opening made by operation should be of about the size of a small goose-quill. Constitutional symptoms may develop after operation. Dr. Daly had frequently noticed pain over the eye as an early symptom of disease of the antrum.

DR. A. W. DE ROALDES, of New Orleans, regarded irrigation through the natural opening as quite practicable. The operative opening should be large. DR. BROWN found the preferable site for operation between the roots of the teeth. In this way a part of the alveolus is perforated, and the floor of the antrum is opened into. A prolonged retention of the tube keeps up the discharge. Irrigation through the natural opening is possible, but not feasible. DR. J. H. BRYAN, of Washington, pleaded for conservatism in the surgery of the antrum. An exploratory opening could be made through either the inferior or the middle meatus. Only the mildest possible antiseptic should be employed. DR. SHIELDS also had found that discharges frequently ceased after the tube was removed. The opening would always close unless the patient had specific disease. DR. CASSELBERRY believed that the antrum is rarely diseased alone. Other sinuses are affected at the same time. They suppurate, and so prolong the discharge from the maxillary sinus. Pain over the eye is probably due to coexistent ethmoid disease.

DR. A. W. DE ROALDES, of New Orleans, read a paper entitled "A Case of Compound Follicular Odontoma invading the Antrum and Corresponding Nasal Fossa; with a New Apparatus for Anesthesia in Operations about the Mouth." A healthy boy, nine years old, presented a fibrous growth at the site of the central incisor tooth of

the right upper jaw. There was also an osseous tumor covering a considerable portion of the palatal bone back of the missing canine teeth, and extending posteriorly alongside the internal plate of the alveolus to near the tuberosity of the maxilla. Both growths were removed. A year later the osseous tumor had returned. A second removal was practised. Soon afterward carious bone was found at the site of operation, and the antrum was exposed. When first seen by Dr. de Roaldes, a hard, bony tumor was found occupying the right cheek, depressing the palatal vault and encroaching on the right nasal fossa. It was fused with the alveolar border exactly at a point corresponding with the missing canine tooth. A diagnosis of osteoma, but possibly odontoma, was made. By a modified Vollet's operation, the whole alveolar border was removed, from nose to tuberosity, and from alveolar border to orbital floor, and the main mass of eburnated bone chiselled out from a place corresponding to the canine fossa. On its surface were tufts of hard, adherent tissue; of these a large number of smaller ones (fifty or more, some tooth-shaped) were gouged out in all directions. After thorough curetting, the cavity was packed and bandaged. Recovery was rapid. Three months later the cavity was two-thirds filled with new, healthy tissue, and a photograph shows no external deformity. Microscopic examination showed the tumor to consist of an hypertrophied tooth-capsule which had ossified sporadically in places, thus producing a large number of denticles, which probably had been originally bound together by periosteum, the denticles being imbedded in the fibro-vascular structures, like plums in a pudding. These denticles consisted entirely of cementum, and the origin of the neoplasm was connected with the unerupted canine tooth. Dr. de Roaldes summarized the salient features of the case as follows:

1. The rare character of the tumor.
2. Its uncommon origin in an unerupted canine tooth.
3. Its location in the right upper maxilla.
4. Its coexistence at one time with a fibrous growth, probably a fibrous odontoma. Odontomata are frequently taken for exostoses, fibromata, etc.
5. The diagnosis is difficult when the mass is imbedded as this one was. A history of the teeth-eruption in each pattent will assist.
6. It is not always necessary to remove the entire maxilla in such cases.

Dr. de Roaldes also exhibited Souchon's apparatus for anesthesia in such cases.

DR. C. M. SHIELDS, of Richmond, Va., reported a case of "Foreign Body in the Larynx." A farmer, while hurriedly walking through some bushes, suddenly felt that he had drawn something into his mouth, being breathless, breathing with his mouth open. He immediately experienced considerable difficulty in respiration. On examination it was found that a burr was lying in the anterior commissure of the glottis, just at the lower level of the vocal bands. Its long axis was antero-posterior, and it was firmly fixed by the closure of the glottis on its sharp points, as it had been grasped just as it was passing through. The removal of the burr was somewhat difficult, on account of the extreme irritability of the throat. Cocain was freely sprayed, but various forceps failed to remove the offending mass, because of the inability to place the blades between the burr and the tisues. Similar failure resulted from the use of a wire loop passed through a curved canula, as the rapidly contracting vocal bands flattened out the wire; so also with cotton twisted on a curved probe, and a curved blunt curet passed below the burr. Tracheotomy was now regarded as inevitable, but finally a Schroetter's tube-forceps succeeded in withdrawing the foreign body.

DR. CHARLES H. KNIGHT, of New York, reported "Three Cases of Laryngeal Neoplasm."

In the first case a diffuse subglottic myxoma was present. This was partially removed through the mouth by Mackenzie's forceps. Tracheotomy was performed under cocain, and radical extirpation of the growth effected through the wound. Recovery ensued without a single bad symptom, and there was no recurrence.

The second case was one of papilloma of the larynx. This was removed with Mackenzie's and the Schroetter-Türck forceps. Galvano-cauterization was applied to the base of a growth attached beneath the right vocal band. Voice was restored within three weeks, although complete aphonia had existed for eight months.

The third case presented multiple papillomata of the larynx, which were removed with Mackenzie's forceps. The growths recurred at the end of a year. A second removal was undertaken, and was followed by a second recurrence, and a third removal five years later.

DR. ARTHUR A. BLISS, of Philadelphia, reported "Two Cases of Malignant Tumor of the Larynx."

The first was a case of squamous epithelioma of the larynx, and occurred in a man forty-six years old, who presented hoarseness, dyspnea, and enlarged glands, the history dating back two years. Owing to a refusal to submit to a radical operation, tracheotomy was advised. Laryngeal examination with the mirror in the pharynx showed the left arytenoid cartilage and vocal band to be so swollen that the band could not be seen. The other band was pushed to the opposite side. There was no odynphagia. The heart-sounds suggested atheroma, and there was considerable albumin in the urine, but no casts. The trachea was opened through the upper two rings. Severe spasm of the glottis resulted in the primary anesthesia with ether, and this was referred possibly to an accumulation of mucus in the air-passages. Death took place suddenly one month later, from angina pectoris. The autopsy revealed thickening of the pericardium, fatty heart, and greatly damaged kidneys.

The second case was one of small round-celled sarcoma of the larynx in a man fifty-three years old, with symptoms resembling those in the first case. The pharynx was normal. The epiglottis was a fungating mass. The right arytenoid was swollen and edematous. A swelling existed in the supra-hyoid region, but there was none over the thyroid. A radical operation was refused, and a high tracheotomy was performed. Death resulted in one year, from exhaustion.

DR. HENRY L. SWAIN, of New Haven, read a paper entitled "A Case of Laryngectomy by a New Method.' The patient was a German, forty-two years old, with an epithelioma of one vocal band, which had followed upon a simple fibroma, the existence of which had been known for a year previously. The malignant mass grew unti it filled the entire larynx. Tracheotomy was performed under cocain, and thirteen days later the larynx was removed. An incision was made from the hyoid bone to

the sternum, and also a low tracheal opening through which a sponge Trendelenburg canula was introduced. Cross-incisions were made from the top of the wound to the sterno-mastoid muscle on each side. The larynx was thus laid bare, and, bleeding being checked, a bistoury was inserted behind the junction of the larynx with the trachea. The trachea then being liberated by a cut with a strong blade, the larynx was hooked up, and dissection begun from below upward. The anterior esophageal wall was closely hugged until the arytenoids were reached. Then the direction of the dissection was changed so as to preserve a part of the arytenoid mucous membrane and of the ary-epiglottic folds. The next step was to cut across the epiglottis, to free the larynx, and check all bleeding. The epiglottis was then sutured to the anterior wall of the esophagus, thus entirely closing the cavity of the pharynx and cutting off all connection with the wound in the neck. Later, the latter was sewed up tightly, except a part of the first median incision, into which the upper rings of the trachea were brought, so that the latter was directed upward and forward. The wound was dressed with a plain dry dressing. No tube was left in the trachea. The operation occupied nearly three hours, and recovery from the ether was perfect. Healing was uninterrupted save for a stitch-abscess above and back of the trachea, which quickly closed up. On the second day the temperature was 101°, and then went down again to normal, without recrudescence. The internal wound at the base of the epiglottis healed by first intention, and the patient swallowed sterilized water from the outset. At the end of a week he could swallow fluid food, and at the end of a second week full hospital-diet. Both wounds were in a healthy condition. At first the man could make no audible sound; later he was able to "hiss" a little, and the sibilant consonants could be heard; now brief sentences and single words can be distinctly understood, even with the back turned, so as to exclude lip-reading. The voice is a whispering one, but is steadily gaining in strength. At the present time he is wearing a tube in his trachea most of the time, and is working at his trade as a carpenter.

Third Day—June 1st.

Dr. W. C. Glasgow, of St. Louis, read a paper on "Exudative Pharyngitis." He reported the case of a robust child, ten months old, that, following exposure to cold, complained of pain in the ear. Two days later, coryza with high fever ensued, the temperature being very irregular and not unlike that of a septic process. From the nose poured out mucus, which excoriated the skin wherever it touched. The excoriations soon became covered with a whitish pellicle. Corresponding lesions soon appeared on the tonsils, uvula, soft palate, and pharynx, but not in the nose. The patches were whitish and elevated, and left no bleeding surface after removal. They looked like blisters containing solid albumin. Prolonged aphonia and urgent dyspnea were prominent symptoms. Some fluid returned through the nose when attempts at swallowing were made. The cutaneous lesions differed from those on the mucous membranes only in having raised edges. There were no enlarged glands. The secretion was strongly alkaline. Therapeutically, reliance was placed upon sodium salicylate and phenol, with brandy internally and hydrogen dioxid externally. The skin was dressed with aristol. The mucous contained streptococci, but no bacilli of Loeffler.

A paper on "Singers' Nodes" was presented by Dr. F. I. Knight, of Boston. He described the lesions as little nodules, as large as a millet-seed, on one or both vocal bands at about the junction of the middle and anterior thirds. They are caused by over-strain of the voice or by error in vocal method. The diffuse variety of this same histologic formation is called chorditis tuberosa, also trachoma of the bands. The single nodules are circumscribed hypertrophies of the epithelium and of the submucous tissues. They contain no glands. As to treatment, the main reliance must be placed on rest and mild astringents. By these means Dr. Knight's cases had been so far improved that he did not feel like risking the possibly bad effects of cutting operations. Still Rice's guillotine might be allowed if simpler methods had failed.

Dr. J. W. Gleitsman, of New York, had been satisfied with the galvano-cautery in these instances. Chromic acid and trichloracetic acid are also useful.

Dr. S. W. Langmaid, of Boston, said that physically we have here to do with a definite, circumscribed tumor. He had seen six or eight cases, in one of which the nodule was further back than is usually the case. They occur most commonly in women, and unless there is too great inflammation of the bands themselves, do well. The nodule is not vascular. Error in vocal methods is not so often the exciting cause as vocal over-strain. Singers whose artistic powers are most acceptable to a critical public may have these nodes, which do not therefore, immediately at least, impair the voice. After treatment an impaired voice may never regain its former qualities, though it may answer for the dramatic stage. Surgical treatment would not necessarily injure the voice unless great violence was done to the edges of the bands. Curetting might suffice.

To an inquiry by Dr. Porcher, if these nodes ever became papillomata, Dr. Knight replied in the negative.

Dr. Murray had seen four cases, one in a child of seven, who sang considerably. He had known a perfect cure to result from the solid silver stick and steam-inhalations.

Dr. J. N. Mackenzie had treated one case of the tuberous variety with lactic acid in concentrated solution.

Dr. T. R. French emphasized the necessity of long-continued local treatment and the good results therefrom. One of his patients had been seen three times a week for over two years and a half, and had made a brilliant recovery. He regarded surgical measures as contra-indicated. He did not believe that the condition had any connection with tuberculosis, and with this view all present coincided.

Dr. W. K. Simpson, of New York, agreed as to excessive use of the voice being the causative factor rather than error in vocal method. These nodules may come from laryngitis or from hemorrhage into the bands. In one of his cases a linear hemorrhage on the inferior aspect of the band, and invisible in ordinary phonation, came into view in the median line when the higher notes were reached.

Dr. Delavan remarked that these nodules sometimes appear quickly in acute laryngitis, but he knew of no

relation between laryngitis and the chronic variety under discussion. As to tuberculosis, the two conditions may, of course, coexist without there being any causative relation between them.

Dr. A. W. Watson, of Philadelphia, reported a "Case of Sarcoma of the Tonsil." It occurred in a woman, fifty-three years old, who felt well until seized with severe sore-throat, probably a quinsy, followed by a discharge of a little pus, but without relief. Sharp pain continued, radiating to the ear. The left tonsil was moderately swollen, and the anterior pillar adherent thereto. The surrounding tissues were not infiltrated. One small gland at the angle of the jaw was enlarged; odynphagia was marked. Medicines gave no relief, and an incision revealed no pus. A part of the tonsil removed for examination showed the latter to have been invaded by a round-celled sarcoma. Removal was effected under cocain six weeks later, with short successive strokes of the galvano-cautery knife. The pillar was also removed at the same operation, the tonsil being lifted up by a vulsellum. Three weeks later, the glandular enlargement had disappeared; swallowing was easy, and the pain in the ear was nearly gone. The peculiar features of the case were the sudden onset, with the presence of so much pain and dysphagia, in view of the lack of infiltration of surrounding structures.

Dr. J. W. Gleitsman, of New York, read a paper entitled "Importance of an Early Diagnosis of Malignant Tumors of the Throat."

He said that at the present time there are three methods of procedure which promise a cure in a certain number of cases, excluding those in which the disease is so far advanced that only a tracheotomy can be done and the patient allowed to die easily, or risk his life by attempts at removal.

The first is the endo-laryngeal method. If the patient comes under observation early enough, this method should be practised oftener than it is.

Second. A possibility of relief is offered by the method of injecting into the malignant mass the cocci or toxins of erysipelas obtained by the cold method. Reference was made also to the use of methyl-blue, which had given better results when the substance had been taken internally than when it had been applied locally.

The third division includes the general subject of surgical removal. From the standpoint of operative surgery the larynx and pharynx could be regarded as analogous to the breast and uterus. Leading surgeons agree that by far too large a number of cases of malignant disease come into their hands too late for an operation. When seen an operation is either impossible or else extremely hazardous. Excepting trauma and sepsis, delay in operation is the most potent factor in determining bad results in surgery. Early diagnosis is often difficult, but when once made no delay is to be tolerated. Each case must be decided on its own merits as to whether a simple tracheotomy or a partial or complete laryngectomy should be done. Pieniazek, a Russian, has had thirty-seven cases of laryngo-fissure, with the head hanging downward, with only two deaths, one from diphtheria and one from tuberculosis. Gleitsman has seen thirteen cases in his own practice. The pharynx was involved in six; four presented carcinomata of various parts, and two tonsillar sarcomata. Of the former, one was operated on three months ago, and feels well now; the others are dead. Of the second two, one was inoperable, and the other lived two years after removal without recurrence, and died by suicide. The larynx was involved seven times—in six with carcinoma (all dead) and in one with alveolar sarcoma. The latter case is living without known recurrence. Laryngo-fissure, with removal of the diseased tissue, was done; unilateral and total laryngectomy were each done twice, and tracheotomy was done once. Death resulted twice speedily from shock, and twice from pneumonia on the second and third days respectively. One had a recurrence after six months, and died from exhaustion. One of the two total laryngectomies did well for six months, but died of an intercurrent appendicitis.

The last two papers were discussed together.

Dr. Wright regarded it as extremely difficult to make an early diagnosis in cases of malignant disease of the throat. Even the microscope is sometimes uncertain until the clinical course of the case removes all doubt. Skepticism was expressed as to the value of the streptococcus of erysipelas and its toxins.

Dr. Langmaid alluded to the method of removal of malignant tonsils from the outside as practised by Cheever, of Boston.

Dr. Casselberry thought it folly to place any reliance on an endolaryngeal operation as soon as malignancy was once determined.

Dr. W. Peyre Porcher, of Charleston, read a paper on "Neurasthenic Throats, with Illustrative Cases." Special stress was laid on the intimate relations between the heart and the lungs. Lesions in one of these organs are likely to excite symptoms in the other. Among the most common symptoms of neurasthenic throats are aphonia, reflex cough, and a spastic state of the muscles of the larynx. Some of these cases seem to be the point of departure for tuberculous invasion.

Dr. E. Fletcher Ingals, of Chicago, communicated clinical reports on the following conditions:

1. Cyst of the larynx. A man, thirty-three years old, had complained of sore-throat for two years, with cough for seven months, and considerable soreness, especially for two months. When seen, the annoying symptoms were hoarseness and a continuous burning pain in the throat. The general health, pulse, and temperature were all normal. He raised about a half-ounce of muco-pus daily, as he had a superficial laryngo-tracheo-bronchial catarrh, but no true pulmonary lesions. A large swelling was found in the larynx, situated on the left ventricular band and ary-epiglottic fold. It was about 1.5 cm. long and 1 cm. in its lateral diameter. Its surface was smooth and covered with congested mucous membrane. Resolvents did not reduce its size. Puncture gave exit to a little semi-transparent, grayish fluid, causing some diminution in the size of the mass. The peculiar feeling imparted to the puncturing needle was that of passing through a cortical portion into a cavity. A diagnosis of cyst was therefore made.

Injections of lactic acid in 30 per cent. solution were at first made at intervals of several days. Later it was decided to resort to injections of carbolic acid. Eight injections were accordingly made at intervals of about a week. From 15 to 20 minims of a 10 per cent. solution of the acid in glycerin and water were used,

with the result of causing nearly the entire disappearance of the tumor. No recurrence had taken place three months later.

The walls of the cyst were so thick that any cutting, crushing, or tearing operation was out of the question. To remove it by operation would, on account of its deep-seated location, have necessitated a removal of considerable of one side of the larynx.

2. Pharyngeal mycosis. Dr. Ingals detailed the histories of twelve cases of this affection. In 58 per cent. of the cases the patients had suffered more or less for years from sore-throat, and in 66 per cent. this had been particularly noticeable from four to six weeks immediately preceding the discovery of the mycosis. Three patients were dyspeptic, but in fully one-half of all of the cases the state of the general health was excellent.

In regard to treatment, Dr. Ingals believes that spontaneous cures are not impossible. Two of his own cases bore out this view. His favorite therapeutic measure is the galvano-cautery at a bright-red heat. Two or three patches are treated at each sitting, and the pain from one séance is allowed to subside before the treatment is repeated. He burns off the surface-mass first, and then plunges the electrode into the subjacent tissues for about one-eighth of an inch. In every instance in his experience under this treatment, a cure has resulted and no recurrence has been reported.

Dr. H. L. Wagner, of San Fransisco, presented a communication entitled "A Contribution to the Study of the Etiology of Rheumatic Affections of the Body due to Tonsillar Diseases." He described the tonsils as an inlet into the system, guarded by the white blood-cells. The latter protects the body from various germs. If the vitality of the cells is lowered, or if a diseased tonsil prevents their migration, the soil may be prepared for the growth of infectious microörganisms. As sequelæ of the diseases thus produced we may have various paralyses (as after diphtheria) and articulo-rheumatic affections (as after lacunar tonsillitis). The question arises: Are the latter produced by the migration of staphylococci, pneumoma-cocci, etc., from the tonsil into the system, or do these organisms remain in their original habitat, sending forth their ptomaïns? Dr. Wagner's researches go to support the former of these propositions. The joints generally affected are those of the ary-cartilages in the larynx, the knee-joints of shoemakers and dealers, owing to the constant kneeling posture, the wrist-joints of violinists and bookkeepers. In the two cases with knee-joint trouble the synovial exudate was removed, and the same organisms found as in the diseased tonsils. In nearly all cases the same germ was found in the urine. The family and the personal history of all these patients showed no rheumatism previous to the tonsillar attacks.

Dr. Harrison Allen, of Philadelphia, demonstrated some skulls of cretins, showing the peculiarities of the condition as affecting the size of the nasal chamber. In all, the hard palate was shortened, the inferior nasal meatus deepened, and in one instance the maxillary sinus was greatly enlarged. Dr. Allen expressed the belief that cretinism is more common in America than is generally supposed.

At the final executive session Dr. John O. Roe was elected President for the ensuing year. Rochester, N. Y., was chosen as the place of meeting, and the time left to the selection of the Council.

AMERICAN MEDICAL ASSOCIATION.

Forty-fifth Annual Meeting, held at San Francisco, Cal., June 5, 6, 7, and 8, 1894.

(By Telegraph.)

General Session.

The question of revision of the Code of Ethics gave rise to a protracted discussion, which terminated in an indefinite postponement of any action upon the subject.

The following were elected the officers for the ensuing year: Dr. Donald McLean, of Detroit, President; Dr. Starling Loving, of Ohio, First Vice-President; Dr. Wm. Watson, of Iowa, Second Vice-President; Dr. W. B. Rogers, of Tennessee, Third Vice-President; Dr. F. S. Bascom, of Utah, Fourth Vice-President; Dr. S. P. Newman, of Illinois, Treasurer; Dr. W. B. Atkinson, of Pennsylvania, Permanent Secretary; Dr. G. H. Rohé, of Maryland, Assistant Secretary. The next meeting will be held at Baltimore, Md., May 7, 8, 9, 10, 1895. Dr. Julian J. Chisholm, of Baltimore, was elected Chairman of the Committee of Arrangements. The Board of Trustees was constituted as follows: Dr. Jos. Eastman, of Indiana; Dr. J. T. Priestly, of Iowa; Dr. J. E. Woodbridge, of Ohio; for unexpired term, Dr. D. W. Graham, of Illinois; for full term, Dr. J. W. Graham, of Colorado, vice Dr. D. C. Patterson, deceased. The Judicial Council: Dr. D. W. Crause, of Iowa; Dr. R. C. Moore, of Nebraska; Dr. T. D. Crothers, of Connecticut; Dr. G. B. Gillespie, of Tennessee; Dr. W. T. Bishop, of Pennsylvania; Dr. C. H. Hughes, of Missouri; Dr. J. J. Heiberger, of District of Columbia; Dr. H. Brown, of Kentucky, for unexpired term. Dr. W. E. Quine, of Illinois, was appointed to deliver the Address on Medicine; Dr. C. A. Wheaton, of Minnesota, to deliver the Address on Surgery; Dr. H. D. Halton, of Vermont, to deliver the Address on State Medicine. Dr. Jerome Cochran was made Chairman of the Committee on Nominations.

Section on Practice of Medicine.

First Day—June 5th.

In the absence of Dr. H. A. Hare, of Philadelphia, the chair was taken by Dr. E. H. Kellogg, of Milwaukee, Wis.

In the absence of Dr. W. H. Washburn, of Milwaukee (the regular Secretary of the Section), Dr. Allen Pierson, of Spencer, Indiana, was appointed Secretary *pro tem.*

Dr. J. H. Wythe, of Oakland, Cal., presented a paper entitled "The Structure of Blood-corpuscles and its Relations to Practical Medicine." He said that from the earliest times physicians had recognized the importance of studying the blood, but owing to inadequate means, it was only within the past ten or fifteen years that a systematic study could be undertaken.

He pointed out that the blood is not simply an aggregation of corpuscular elements, but that the plasma is capable of exerting a powerful influence upon the economy, *e.g.*, by its bactericidal powers. This power was ascribed to the solvent action of the serum. Changes in the specific gravity, as well as in the acidity and

alkalescence of the blood should be noted. These often point to diseased conditions, and are due probably to the absorption of certain toxins, ptomaïns or leukomaïns, etc. As a result of observations of varied changes in the red blood-corpuscles, Dr. Wythe concludes that the changes have a definite relation to diseased conditions. Considering the various functions performed by the blood, it is not strange that it is constituted of a variety of structures.

Reference was made to eighteen cases of beri-beri in which the red blood-corpuscles were found in various stages of disintegration. Upon the basis of this observation, iron, quinin, and a generous diet were advised, with the result that every case improved.

DR. WM. WATT KERR, of San Francisco, read a paper entitled "Digitalis in the Treatment of Pneumonia." He briefly outlined the three principal classes of teaching as regards the use of digitalis in pneumonia. Those of the first class regard it as a specific; those of the second say that it has little or no effect; while those of the third believe its use inadmissible on theoretic grounds, objecting that the congestion and consolidation of the lungs offer a great resistance to the pulmonary venous flow, thus overcrowding the right heart, and that by using digitalis there is danger of inducing cardiac paralysis.

Depressed cardiac action in pneumonia is due 1, to absorption of toxins and products of tissue-waste; 2, to the pyrexia; 3, to obstruction of the circulation through the lungs. Dr. Kerr has never found digitalis produce any but good results when the indications pointed to its use. There are two conditions contra-indicating its use: 1, when pneumonia occurs in patients with fatty or degenerated heart; 2, when the patient is extremely plethoric. In these cases he uses nitroglycerin to overcome arterial tension. Digitalis is beneficial in certain cases of pneumonia, but it was not claimed that it is a specific. So long as the heart is doing its work well it should be left to itself and the course of treatment be directed to the other morbid conditions, but as soon as there is evidence of cardiac weakness, ♏xv of digitalis should be given every three hours till the pulse shows evidence of its effect; then the dose should be reduced sufficiently to hold the heart steady. When a patient comes under observation after the heart is overburdened, the best line of treatment is bloodletting and digitalis. Tincture of aconite and tincture of veratrum viride do more harm than good. Digitalis frequently fails in the treatment of pneumonia because its action is essentially on the nervous system and this is neutralized by the pyrexia and toxemia; these should be overcome by the use of strychnin, etc. A more competent and thorough study of the pulse was urged as being the great indicator for the drug-action of digitalis.

DR. WASHINGTON AYER, of San Francisco, believed the lancet a most excellent agent, although requiring caution in its use. When the pulse is feeble, the secretions thick, tenacious, and viscid, the respiration difficult, and the patient appears to be in *articulo mortis*, venesection is the only measure that offers any hope of relief.

DR. DEWITT, of San Francisco, stated that, according to his personal experience, fifteen-minim doses of tincture of digitalis are too large. He has found a "reflex action" occur, making him rather timid; with such large doses he has always found nausea to follow.

DR. HURST, of Indiana, cited two cases in his early practice in which digitalis was being given in full doses of the infusion. One case presented a pulse of 40 per minute, with profuse sweating and nausea. The digitalis was withheld and whiskey and general stimulating treatment given, and the patient was saved. The other case ended fatally, because of the injudicious use of digitalis, it was believed.

DR. LORING, of Chico, indorsed the use of digitalis, but found that, as a rule, not more than one or two doses of ♏xv of the tincture could be tolerated. He usually used only ♏viij per dose, nausea occurring almost uniformly under larger doses.

DR. AYER, of San Francisco, stated that he uses whiskey and ammonium carbonate when the heart becomes weak. He recommends their use diligently and fearlessly; unless some stimulation is resorted to there is likely to be venous stasis in the lungs.

DR. KERR, in closing, said that the dosage of digitalis recommended referred to the U. S. P. tincture; he again emphasized the fact that the dose must be diminished as soon as the pulse showed the effect of the drug-action. He had rarely had any nausea result in patients with croupous pneumonia, although he had observed nausea result from digitalis in some heart-cases. He did not advocate the indiscriminate use of digitalis in pneumonia, but in those cases indicating its use there is always benefit.

In the absence of DR. DOUGLASS W. MONTGOMERY, of San Francisco, his paper, entitled "Leprosy in San Francisco," was read by the Secretary, Dr. Pierson. The ground was taken that leprosy is a contagious disease, as has been shown by clinical evidence. In view of this fact care should be taken by all municipal authorities to isolate those suffering with the disease. Dr. Montgomery took the Chinese quarter of San Francisco as an example of a favorable soil for the growth of leprosy. He cited a number of cases that had come under his observation, in the persons of Chinese, that would seem to show that the disease was contracted in this country, but a more careful investigation of the history showed, in every instance, that it was probably contracted in China. He has never met with a leprous Chinese native of this country. The period of incubation in the cited cases was very variable.

DR. W. R. CLEAVELAND, of Biggs, Cal., read a paper entitled "Importance of Early Diagnosis and Prompt Treatment in Acute Catarrhal Pneumonia." He dwelt upon the necessity of careful physical examination of the chest, especially in the old and in debilitated subjects in whom there was a suspicion of pneumonia. Percussion will clear up any doubt in the diagnosis between catarrhal and croupous pneumonia. Auscultation will first give warning of the impending trouble. The earlier free expectoration can be brought about the better the chances of the patient. In the experience of Dr. Cleaveland many cases followed influenza, and the majority of cases of catarrhal pneumonia occurred in strong, robust individuals.

The treatment includes the application of a jacket of surgeons' lint, covered with oiled silk or mackintosh, and the internal use of ammonium carbonate and ammonium iodid as expectorants. The air of the sick-room should not be dry, but should be kept moist and

impregnated with vapors of turpentine and eucalyptus. Strychnin and quinin should be used in tonic or stimulating doses. Alcohol, in the form of whiskey, and as eggnog, is of the utmost service; alcohol in some form must be used. For the febrile symptoms acetanilid or phenacetin was recommended. Apomorphin is an important and most excellent expectorant. If the case comes under observation early, and if free expectoration is established, and the digestive apparatus attended to, favorable results may be looked for.

Digitalis and trinitrin may be used in cases with weak heart. Vesicants should be used to hasten absorption of consolidated areas, while internally, syrup of hydriodic acid and syrup of the hypophosphites should be given.

SECTION ON SURGERY.

FIRST DAY—JUNE 5TH.

The address of the Chairman, DR. JOHN B. ROBERTS, of Philadelphia, was entitled "Some Surgical Sins." He directed attention to a class of surgeons claiming wonderful results and performing operations simply for the sake of operating, with no view to a satisfactory result and full of dogmatic assertion. Operative madness is endemic among those whose preliminary training has been deficient and who possess limited scientific knowledge. Preliminary education is a corrective, and a reaction is fast taking place. A true surgeon, possessed of a thorough pathologic knowledge, must be a man of broad culture and have had an adequate preliminary education. Surgeons should be careful to make accurate statements and to refrain from criticising others. A great surgical sin is the overlooking of the influence of the nervous system upon disease. The evil of physicians controlling private hospitals was condemned. Such institutions become hotels for patients, and, of course, those interested are tempted to strive to keep them filled with long-staying guests. The sin of charging large fees was also condemned. The refusal to consult with a brother-practitioner because the patient is poor constitutes another sin, as also does the charging for services rendered to a physician or his family. Secret nostrums were denounced as being unscientific, not precise, and never to be used, because usually their contents are unknown.

DR. A. P. OHLMACHER, of Chicago, read a paper entitled "A Critique of the Sporozoan Theory of Malignant Neoplasms from a Micro-technical Standpoint." He pointed out that many objects have been described as the parasites of carcinoma, because the subject has been handled unscientifically. A great number of reagents have been used; hence the diversity of results. Artificial products are sometimes found by the reagents. It has been found that sporozoa treated by different fixing solutions act differently. Some agents distort the spores and interfere with the subsequent staining. All of the present methods of investigation are faulty and no results are to be looked for until new methods are devised.

DR. R. A. MCLEAN, of San Francisco, read a paper on "The Necessity of Early Surgical Interference in Malignant Tumors." He said that when malignancy in a growth has once been established its removal must be immediate. Recurrence is frequent because the operative interference is delayed until the case is hopeless. Among the causes of failure of operations are: great size of the growth; infiltration of adjacent tissues; metastases; ulceration; exhaustion, and septicemia. The great mistake is not insisting on a radical cure. A temporizing policy is fatal. In suspected cases malignancy, tuberculosis, and syphilis are to be differentiated. One month's observation should clear up any doubts. Another cause of delay is the attempt to label the growth. Early in the case a small operation only is, as a rule, necessary. In operating, as much involved tissue as can be removed with safety should be extirpated. The incision should go well around the probable limits of infiltration. In carcinoma of the tongue or lip the bone should be taken out if it is eroded. In the extremities, amputation should be performed on the proximal side of the next articulation above the growth. Excision should be practised in all cases in which the general health is good,

DR. JOHN PARMENTER, of Buffalo, read a paper on "The Value of Caustics in Malignant Growths." Among the many claims made for caustics are: 1. The less frequent recurrence. 2. The selective action of the agents used. 3. A reduction in the size of the enlarged lymphatics. These claims are, however, not well grounded. The value of a caustic resides in the selection of a proper agent and the selection of proper cases. A proper caustic is one that entirely destroys the diseased tissue, and it should be rapid in its action. Caustics must be used in conjunction with common sense. All diseased tissue should be burned. The application should not be made too extensive. The pain should be mitigated as much as possible. Suitable cases include those (1) located in a favorable anatomic situation; (2) in which there is no involvement of the lymphatic glands. Unsuitable cases include those in which the growths are inaccessible, involve bone, or are in proximity to large vessels. Bad results follow poor technique, too limited application, tardy diagnosis.

DR. L. DUNCAN BULKLEY, of New York, read a paper on "The Value of Caustics in Malignant Growths." He stated that the indications for caustics are as follows:

In the early stages, they are useless after metastasis, extensive ulceration or glandular involvement has taken place.

In the formative period.

In epitheliomata in accessible regions.

The best form of caustics are: wheat flour; arsenic; cinnabar; ammonium chlorid; mercuric chlorid; zinc chlorid.

Mild caustics are useless; silver nitrate is of no value.

Pyrogallic acid is serviceable after curetting.

DR. J. H. WYTHE, of Oakland, Cal., read a paper entitled "The Radical Cure of Malignant Tumors by Operation." He emphasized two principles:

I. Operate early.

II. To remove with the growth a quantity of the neighboring tissue.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

FIRST DAY—JUNE 5TH.

The Section was called to order by DR. J. MILTON DUFF, who introduced Dr. Joseph Eastman, of Indianapolis, President of the Section. (For Dr. Eastman's address see THE NEWS, June 2, p. 629.)

On motion a vote of thanks was tendered the President

and his paper requested for publication. In the absence of the Secretary, Dr. Newman was appointed Secretary *pro tem.*

DR. FRANKLIN H. MARTIN, of Chicago, read a paper on "Operative Treatment of Fibroid Tumors of the Uterus;" in which he made a summary report of six previously published cases, and a first report of two recent cases of his new operation for fibroids. The following are the conclusions of the paper:

1. In hysterectomy we have an operation which is bearing the test of time well; in selected cases in the hands of well-trained men it is the only absolute cure yet demonstrated for a certain class of fibroids.

2. The objections to hysterectomy for fibroids are the long training necessary to safely equip an abdominal surgeon for this most formidable of pelvic operations; the great death-rate of this operation in the hands of the tyro; the long prostration accompanied frequently with nervous symptoms following otherwise successful hysterectomies; its inapplicableness to extremely exsanguinated and otherwise reduced patients, and finally its inevitable death-rate of at least 5 per cent. in the hands of expert surgeons.

3. Removal of the appendages is usually unsatisfactory, and should not be resorted to ordinarily, except as a last resort in a complicated case when the abdomen has been opened for the purpose of removing the uterus, and the latter operation for some reason has proved impracticable.

4. If the appendages are removed for the purpose of establishing an artificial menopause and for the purpose of reducing small fibroids by modifying their nutrition, make sure to include in the ligature the main channel of the ovarian artery.

5. Vaginal ligation of the base of the broad ligament for fibroid of the uterus is an operation still on trial. As far as we have the history of cases to back the theories of the operation, it has stood the test.

6. Vaginal ligation of the broad ligament is a minor operation from the standpoint of mortality, and it is a minor operation from the standpoint of immediate and remote shock to the patient. It can be performed on any patient without risk in almost any condition of physical prostration or weakness, so long as she is capable of taking an anesthetic.

7. The operation is prompt in saving blood. It succeeds in cutting off one-third more blood to the uterus than does the Battey-Tait operation. Theoretically and practically it immediately checks uterine hemorrhage, and at once begins the diminishing of the myoma by depriving it of its nourishment.

8. The operation of ligation of the broad ligament does not leave an abdominal scar, and does not unsex the woman, as do hysterectomy and the Battey-Tait operation.

9. There are no good reasons why ligation of the broad ligament should not be an early procedure in all conditions of uncomplicated fibroids of the uterus in which the operation is practicable, even though in a few cases, subsequently, a more radical operation might be necessary.

10. The operation of vaginal ligation of the broad ligament is practicable in all interstitial or moderately sub-peritoneal fibroids in which it is possible by careful dissection to expose the base of the broad ligament high enough to include in a ligature the uterine artery and its branches.

DR. E. E. MONTGOMERY, of Philadelphia, followed with a paper on "The Removal of Fibroid Tumors through the Abdomen."

DR. R. E. HORTON, formerly President of the Illinois State Medical Society, said that we must be guided in the selection of the method by the condition of the case. He commended Dr. Martin's operation for controlling hemorrhage and starving small fibroids.

DR. MCCALL, of Michigan, spoke of the President's method as an ideal one, but thought that in many cases it could not be carried out. He recommended the conservative method of Dr. Martin whenever applicable, and spoke of the excellent results he had had with this operation. He thought that the failures in the operation for the removal of the appendages were largely due to the fact that the ligatures were not placed deeply enough and close enough to the uterus. It is well even to include the cornu of the uterus itself.

DR. LAPTHORNE SMITH, of Montreal, followed with a plea for the trial of electricity before more radical measures are resorted to. He believed in using the positive galvanic current and constitutional treatment for two or three months, and if the case showed no improvement, then to operate. Of the operations he preferred Dr. Martin's, in which there was no death-rate, to that which in the best of hands gave a mortality of 5 per cent. Only in extreme cases should the graver operations be resorted to.

DR. MCMONAGLE, of San Francisco, summarized the dangers of fibroids of the uterus under the heads of hemorrhage, pressure, and malignant degeneration. With regard to Dr. Martin's operation he inquired, "Will the degeneration be simple or malignant?" The operation, he felt, was still *sub judice*. He had the misfortune to see electricity continued so long as to change a fibroid into a sarcoma. He also asked Dr. Martin, "What if the woman should become pregnant?" also, if a starving of the uterus might not result in degeneration of the mucous membrane and in septic infection. He suggested that, as a preliminary to the operation, the uterus be curretted and packed.

DR. H. O. MARCY, of Boston, said that he had never used electricity without the patient feeling benefited by it. He has discarded its use for fibroids. If the patient is young, and the tumor small, it is best treated by ligature of the vessels and removal of the appendages. If the growth is larger, removal of the appendages may fail. He spoke of the extra-abdominal treatment of the stump as not being ideal surgery. It was still resorted to simply because the experience of older men taught it to be safe. If surgery is aseptic, nothing is gained by this method. We simply confess that we are afraid of hemorrhage and infection.

DR. E. E. MONTGOMERY, of Philadelphia, thought that the loss of so large a quantity of blood as took place in Dr. Martin's operation might cause degeneration, sloughing, and danger of sepsis. He feared that the use of electricity might produce malignant degeneration.

In reply to a question put to Dr. Marcy, he said he had never seen malignant degeneration follow the use of electricity.

DR. SMITH said, in respose to an inquiry, that he never used the galvano-puncture, as it contained an element of danger, and the use of electricity should be free from danger. He thought that the cases in which electricity was charged with causing malignancy represented errors of diagnosis. He cited a case in which a supposed fibroid not improving by electricity was operated upon, when it proved to be a sarcoma of the ovary in which the uterus was imbedded.

In closing the discussion DR. MARTIN said he wished to eradicate a false impression made on the minds of some. He did not believe that his operation was applicable to all cases. When the case demanded it, he was always ready to open the abdomen. He said he never knew a case of malignant degeneration to follow the use of electricity; but, on the contrary, a case diagnosticated by an eminent pathologist as one of bleeding sarcoma, had been cured by him by this method. He called the attention of the section to Dr. Byford's operation of hysterectomy as one of the best.

With regard to the results feared from cutting off the blood-supply in his operation, he said that in his first operation he was moved by the same fears, and it was the least successful of his cases, because it was not sufficiently thorough. While perhaps two-thirds of the blood-supply is cut off, there is still more than the normal amount going to the uterus. Dr. Martin thinks that pregnancy can take place and come to a successful termination, and hopes to demonstrate this in the near future. He stated that as a preliminary to his operation he always curetted the uterus, so as to make a clean field for his vaginal wounds.

Upon motion of Dr. Martin, the President was given the privilege of closing the discussion. DR. EASTMAN showed that gangrenous masses existed in some of the specimens of fibroids exhibited. He asked Dr. Martin how he could tell that these did not exist before tying the broad ligament. All methods are not applicable to all cases. If any one method is applicable to all, it is that of enucleation. He thought that if it was necessary to draw the uterus through the vagina at all, a wide incision should be made upon a staff and the cervical canal packed, or a tube surrounded with gauze introduced. He protested against drainage that did not thoroughly drain. He thought the strongest point in favor of the abdominal method of fixation of the stump was that there was one wound instead of two.

The President then announced the following Nominating Committee: Drs. E. E. Montgomery, Philadelphia; J. M. Duff, Pittsburg; J. H. Davisson, California; J. C. Coles, California; Lapthorne Smith, Montreal.

NEWS ITEMS.

Dr. Middleton Michel, a distinguished physician of Charleston, S. C., died on June 4th, at the age of seventy-two years. He received his medical education at Paris, but afterward graduated from the Medical College of the State of South Carolina. At one time he conducted a "Summer Institute," in which he delivered lectures on anatomy, physiology, and obstetrics to large classes. He had been one of the editors of the *Charleston Medical Journal* and occupied for many years the chair of physiology and medical jurisprudence in the Medical College of the State of South Carolina. He was a member of numerous learned societies and a frequent contributor to medical literature. He was a physician of high attainments, a teacher of rare ability, a scholar of great versatility, a writer of eminent merit, and a charming gentleman of the old school who, while alive to the demands of the crowding present, was not unmindful of the historic past.

Changes in the Medical Department of the University of Virginia.—Dr. William Christian has been elected to the Chair of Anatomy and Dr. J. Staige Davis Adjunct Professor of Pathology and Hygiene.

Dr. Theophilus Parvin has been elected an honorary member of the Obstetrical and Gynecological Society of Berlin.

BOOKS AND PAMPHLETS RECEIVED.

Sammlung klinischer Vorträge begründet von Richard von Volkmann. Neue Folge, herausgegeben von Ernst von Bergmann, Wilhelm Erb und Franz von Winckel. Nr. 79. (Neunzehntes Heft der dritten Serie.) Das seborrhoische Ekzem von P. G. Unna. Leipzig: Druck und Verlag von Breitkopf & Hartel, 1893.

Der Streptobacillus des weichen Schankers. Von P. G. Unna. Sonder-Abdruck aus Monatshefte für praktische Dermatologie, 1892.

Zur Färbung der Rotzbacillen in Hautknoten und überhaupt schwierig färbbarer Bacillen, welche weder Iod noch säurefest sind. Von P. G. Unna. Sonder-Abdruck aus Monatshefte für praktische Dermatologie, 1893.

Zum Nachweise des Fibrins in den Geweben, speciell in der Haut. Von P. G. Unna. Sonder-Abdruck aus Monatshefte für praktische Dermatologie, 1893.

Kritische Bemerkungen zum Pleomorphismus der Achorionarten. Von C. H. Neebe und P. G. Unna. Sonder-Abdruck aus Monatshefte für praktische Dermatologie, 1893.

Philadelphia Hospital Reports. Vol. II. 1893. Edited by Charles K. Mills, M.D., and James W. Walk, A.M., M.D. Philadelphia: J. B. Lippincott Co., 1893.

The Physician's Wife and the Things that Pertain to Her Life. By Ellen Firebaugh. Philadelphia: The F. A. Davis Co. London: F. J. Rebman, 1894.

Holden's Manual of the Dissection of the Human Body. Edited by John Langton. Sixth edition. Revised by A. Hewson, M.D. Philadelphia: P. Blakiston, Son & Co., 1894.

A Case of Contusion and Rupture of the Ileum. By Frederick Holme Wiggin, M.D. Reprinted from the New York Medical Journal, 1894.

On the Etiology of Appendicitis. By Eugene Hodenpyl, M.D. Reprinted from the New York Medical Journal, 1893.

The Johns Hopkins Hospital Reports. Report in Gynecology, II. Baltimore: The Johns Hopkins Press, 1894.

The Supra-pubic Removal of an Enormous Vesical Calculus, together with the Pathology of Stone in the Bladder. By Carl V. Vischer, M.D. Reprinted from the Hahnemannian Monthly, 1893.

U. S. Department of Agriculture. Bureau of Animal Industry. Eighth and Ninth Annual Reports of the Bureau of Animal Industry for the Years 1891 and 1892. Washington: Government Printing Office, 1893.

Some Reasons for the Performance of Circumcision on All Male Infants. By Alex. L. Hodgson, M.D. Reprinted from the American Medico-Surgical Bulletin, 1893.

Inter-State Commerce Commission. Preliminary Report of the Income Account of Railways in the United States for the Year ending June 30, 1893. Washington: Government Printing Office, 1894.

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ORIGINAL ARTICLES.

THE REMOVAL OF STONE IN THE BLADDER.[1]

BY WM. S. FORBES, M.D.,

PROFESSOR OF ANATOMY IN JEFFERSON MEDICAL COLLEGE, AND CLINICAL SURGEON TO JEFFERSON MEDICAL COLLEGE HOSPITAL.

IT is my purpose to demonstrate:

1. The measured crushing resistance of vesical calculi.

2. The measured strength of the lithotrite.

3. The lithotrite from a mechanical point of view.

4. A new lithotrite.

Given the problem—a stone in the bladder, a limited viaduct to reach it: remove the stone without injuring the parts. There are two unknown factors in this problem: First, the crushing resistance of the stone, and second, the strength of the lithotrite used in reducing the stone so that it may be removed with facility. Knowing the crushing resistance of the strongest vesical calculus in our possession, we are in a position to proceed to so construct a lithotrite that we can successfully crush and safely remove such a stone were we to meet with it in the human bladder. So far as I know, the exact crushing resistance of a vesical calculus has never been stated by any writer. Such vague statements as "very hard," "very tough," "very large," etc., have been used in describing stones, but the measured crushing resistance of any stone taken from the human bladder has always been overlooked. The same may be said of the lithotrite. "Very strong," "very powerful," etc., have been the vague terms used in describing it; but its measured strength computed by any unit has never been stated. In order to inform myself exactly on these points I addressed a letter to the Librarian of the Surgeon-General's Office, Washington, asking for any information whatever the Library contained in regard to them, and his reply was that the Library contained nothing relating to the matter.

It is manifest, therefore, that I have entered an entirely new field of investigation. Now, with a perfect disposition to respect the written law of this body to study economy of time, I shall strive to aim at all practicable condensation and brevity. A very liberal expenditure, however, is at times demanded by the wisest economy; and if it shall be found—as I fear it may, from the almost elementary manner in which, to meet all exigencies, the questions that arise must be discussed—that my own outlay offends against the letter of the law, I hope it also will be found that it is in harmony with its spirit.

In order to attain the necessary knowledge for the solution of the problem in question, it is necessary first to measure the crushing resistance of a large number of stones taken from the human bladder, a very large number of every size, embracing the hardest, toughest, and largest specimens, for it must be borne in mind that it is especially these that we seek to investigate, rather than those that are small and readily broken by very moderate pressure. So far I have been able to collect from all sources only 184 human vesical calculi for this investigation.

The table herewith annexed, in which the results are given, is so arranged that any number can be added. I propose to continue these investigations, and from time to time I shall add and publish the results observed. I shall begin my task impressed with that fine saying of Coleridge: "The conditions of science should be weighed in the scales of a jeweller, and not like the commodities of the market on the weigh-bridge of common prejudice and vulgar error."

We find that the 184 vesical calculi tabulated are divided as follows:

Oxalate of lime	55
Phosphate of lime	64
Uric acid	27
Oxalate and phosphate mixed	15
Uric acid and phosphate mixed	8
Uric acid and oxalate mixed	7
Oxalate, phosphate, and uric acid mixed	4
Combustible, requiring further examination	2
Carbonate of lime and oxalate	1
Cystin	1
	184

Had time permitted, the grouping of the calculi in the table below would have been made on the basis of their chemical constitution, as indicated in the foregoing summary.

At some future time this grouping will be arranged and all additions to it will be made upon this basis.

[1] Read before the American Surgical Association, June 1st, 1894, during the Triennial Congress of American Physicians and Surgeons.

TABLE OF THE MEASURED CRUSHING RESISTANCE OF 184 VESICAL CALCULI.

No.	Appearance of calculus.	Composition of calculus.	Diameters, in millimeters.	Volume, in cubic centimeters.	Weight, in ounces and grains.	Specific gravity (approximate).	Axis of holding between jaws of lithotrite.	Actual crushing resistance of calculus, in lbs., with Forbes' lithotrite; friction of lithotrite and testing apparatus deducted.	Direction of fracture to line of force applied.	Time slowly increasing pressure was applied to calculus, in min.	Number of fragments.	Flying fragments.	Distance fragments were thrown, in inches.	Size of lithotrite used (French scale).	Impaction of lithotrite, measured by increased size, in degrees of French scale.	Point of fracture in lithotrite.	Calculus loaned by
1	Smooth	Inside oxalate, outside phosphate.	32-38-54	36	1-392	1.577	Short	264.25	Coincident	10	2	None	None	33			
2	"	Uric acid	14-25-31	6.7	0-130	1.272	"	105.00	Radiating	1	Many	"	"	30			
3	"	Phosphate of lime	25-33-39	17	0-368	1.410	"	60.46	Coincident	½	3	"	"	30			
4	Granulated	Uric acid	20-25-36	8.5	0-180	1.379	"	150.00	"	4	5	Some	18	30			
5	Smooth	Phosphate	18-22-34	5.5	0-155	1.836	"	30.23	"	¼	3	None	None	30			
6	Granulated	Oxalate	25-29-32	10.5	0-233	1.445	"	50.39	"	1	2	"	"	30			
7	Smooth	Phosphate	15-26-32	6	0-145	1.574	"	140.00	"	4	2	"	"	30			
8	"	Oxalate	14-21-25	4.5	0-116	1.685	"	162.00	Crucial	4	4	"	"	30			
9	"	Phosphate	14-24-28	5	0-114	1.485	"	90.00	Coincident	1¾	4	"	"	30			
10	"	"	34-42-54	39	1-427	1.598	"	79.50	"	4	2	"	"	33			
11	"	"	24-32-53	22.5	1-110	1.708	"	59.50	"	1½	2	"	"	33			
12	"	"	23-32-55	23.7	1-44	1.440	"	67.00	"	2	2	"	"	33			
13	"	"	25-32-41	19.8	0-396	1.302	"	110.50	Radiating	2	4	"	"	33			
14	"	"	7-16-32	1.3	0-33	1.654	"	50.00	Coincident	1¾	4	"	"	30			
15	"	"	9-17-21	1.1	0-31	1.836	"	62.00	"	2	2	"	"	30			
16	"	Uric acid	28-35-38	17	0-413	1.582	"	142.50	"	4	3	"	"	33			
17	"	Oxalate	41-57-68	77	3-303	1.474	"	214.00	Radiating	6	4	Two	12	33			
18	"	Phosphate	25-35-42	16.9	0-340	1.310	"	79.50	Coincident	3	3	None	None	33			
19	"	"	20-22-25	6.2	0-116	1.218	"	66.00	Radiating	1	Many	"	"	30			
20	"	"	15-21-24	4.5	0-68	1.085	"	65.00	Coincident	1½	2	"	"	30			
21	"	"	24-27-28	10.1	0-180	1.173	"	74.00	Radiating	3	5	"	"	30			
22	Nodulated	"	35-40-60	34.5	1-99	1.888	"	25.20	Coincident	¾	2	"	"	30			
23	Smooth	Uric acid	10-19-23	3.2	0-58	1.178	"	83.00	Radiating	5	Many	"	"	30			
24	"	Phosphate	25-28-29	8	0-162	1.311	"	98.00	"	3	4	"	"	30			
25	"	"	18-26-37	10.6	0-203	1.241	"	90.00	Coincident	2½	2	"	"	30			
26	"	Oxalate	12-21-31	3.6	0-78	1.411	"	60.00	"	2¾	Many	"	"	30			
27	Nodulated	" with little uric acid intermixed	35-39-48	34	1-435	1.753	"	406.00	"	11	2	Two	18	33			
28	Smooth	Phosphate	29-44-50	32	1-166	1.335	"	131.25	"	8	3	None	None	33			
29	"	"	23-39-45	20.3	0-388	1.245	Intermediate	31.50	"	½	Many	"	"	33			
30	"	Uric acid	17-32-40	12.5	0-285	1.485	Short	51.00	"	1½	3	"	"	30			
31	"	Oxalate	12-18-22	3	0-61	1.324	"	79.50	"	3	2	"	"	33			
32	"	Inside uric acid, outside phosph.	40-46-78	69.5	2-417	1.290	"	122.25	"	5	Many	"	"	33			
33	"	Phosphate	10-18-41	4.2	0-81	1.256	Intermediate	31.50	"	1	2	"	"	33			
34	"	"	5-12-17	7	0-12.5	1.163	Short	21.00	"	1	3	"	"	33			
35	"	"	18-50-66	79.5	3-270	1.412	"	280.00	"	11	2	"	"	33	Note	None	Jefferson Medical College
36	"	"	15-17-22	3.1	0-50	1.050	"	10.07	"	¾	2	"	"	30			
37	"	Oxalate	20-22-38	9.5	0-204	1.302	"	162.00	"	9	5	"	"	30			
38	Rough,	Uric acid	42-60-66	79.5	3-459	1.556	"	110.50	"	3	2	"	"	33			
39	" mammillated	Inside oxalate, outside phosph.	30-44-56	38	2-6	1.655	"	187.86	"	8	3	One	10	33			
40	Smooth	Oxalate	26-32-35	14.6	0-311	1.387	"	160.24	"	7	3	Some	20	33			
41	"	Inside uric acid, outside phosph.	15-20-22	3.7	0-62	1.091	"	50.00	"	1½	4	None	None	30			
42	"	Uric acid	18-39-48	17.5	0-417	1.552	"	150.00	"	5¼	2	One	18	30			
43	"	Inside uric acid, outside phosph.	30-37-59	35.5	1-372	1.563	"	122.25	"	3	2	None	None	33			
44	Smooth, irregular	Inside phosphate with oxalate, outside phosph.	25-34-50	18	0-371	1.342	"	131.25	"	4	2	"	"	33			
45	Smooth, flat	" " "	15-36-39	8.7	0-173	1.295	"	131.25	"	5	2	"	"	33			
46	Rough	Phosphate	15-24-30	5	0-90	1.172	"	62.00	"	1½	3	"	"	30			
47	Smooth	Oxalate	24-30-45	17.8	0-406	1.485	"	183.62	"	2½	3	Some	18	33			
48	"	Phosphate	19-22-34	4.8	0-93	1.262	"	110.00	"	3	2	None	None	30			
49	Lobulated	Uric acid	22-29-31	9.8	0-241	1.602	"	122.25	"	3	3	"	"	33			
50	"	" "	11-17-18	1.7	0-40	1.533	"	34.12	"	3	3	"	"	33			
51	Smooth	" "	10-14-16	1.3	0-29	1.453	"	21.00	"	1	2	"	"	33			
52	"	" "	11-12-14	18	0-8	1.384	"	36.74	"	1	2	"	"	33			
53	"	" "	7-10-11	0.4	0-10	1.628	"	44.50	"	2	2	"	"	33			
54	"	" "	7-8-10	0.3	0-7	1.521	"	42.00	"	3	Many	"	"	33			
55	"	Inside uric acid, outside phosph.	30-32-43	24	0-479	1.300	"	173.00	"	6	2	"	"	33			
56	Mammillated	Oxalate, bloodclot inside.	20-26-35	10.2	0-194	1.239	"	30.23	"	½	Many	"	"	30			
57	"	Oxalate	15-21-27	4.6	0-114	1.614	"	156.00	"	7	2	"	"	33			
58	Smooth	Inside oxalate, middle uric acid, outside phosph.	17-30-38	10.1	0-229	1.477	"	105.00	"	5	2	"	"	30			
59	"	Inside uric acid, outside oxalate.	17-22-27	6	0-133	1.444	"	138.00	"	7	2	"	"	33			
60	"	Phosphate	21-31-38	14	0-297	1.382	"	82.00	"	2	4	"	"	33			
61	Granular	Cystin	13-20-27	3.7	0-80	1.408	"	62.00	"	1	2	"	"	33			
62	Rough, mammillated	Oxalate	17-20-22	3.6	0-87	1.574	"	126.75	"	7½	2	"	"	33			
63	Smooth	Phosphate	15-22-26	4.8	0-97	1.316	"	93.87	"	2	2	"	"	33			
64	"	Inside oxalate, outside phosph.	27-32-40	17.2	0-402	1.522	"	187.86	Crucial	8	4	Some	24	33			

No.	Appearance of calculus.	Composition of calculus.	Diameters, in millimeters.	Volume, in cubic centimeters.	Weight, in ounces and grains.	Specific gravity (approximate).	Axis of holding between jaws of lithotrite.	Actual crushing resistance of calculus, in lbs., with Forbes' lithotrite; friction of lithotrite and testing apparatus deducted.	Direction of fracture to line of force applied.	Time slowly increasing pressure was applied to calculus, in min.	Number of fragments.	Flying fragments.	Distance fragments were thrown, in inches.	Size of lithotrite used (French scale).	Impaction of lithotrite, measured by increased size, in degrees of French scale.	Point of fracture in lithotrite.	Calculus loaned by
65	Smooth	Phosphate . .	30-33-35	18.2	0-295	1.055	Short	89.11	Coincident	4	2	None	None	33	}	}	}
66	"	" . .	17-29-36	10.6	0-241	1.481	"	86.74	"	3	2	"	"	33			
67	"	" . .	15-23-31	5.7	0-112	1.280	"	39.36	"	2	2	"	"	33			
68	"	Combustible, further examination necessary.	21-25-28	8	0-144	1.172	"	42.00	"	1½	2	"	"	33			
69	"	Phosphate . .	30-42-55	37.5	1-379	1.492	"	110.50	"	5	3	"	"	33			
70	Rough	Oxalate . .	20-22-30	7.9	0-170	1.401	"	39.36	"	2	2	"	"	33			
71	Smooth	Phosphate . .	36-38-67	36.5	1-133	1.094	"	140.25	"	8	2	"	"	33			
72	"	Oxalate . .	29-35-40	21.5	1-5	1.469	"	89.11	"	3	2	"	"	33			
73	"	Phosphate . .	24-27-47	16.3	0-345	1.378	"	106.74	"	4½	2	"	"	33			
74	"	" . .	12-19-29	5	0-88	1.146	"	47.00	"	3	2	"	"	33			
75	Mammillated	Oxalate . .	18-23-25	5.3	0-131	1.610	"	154.74	"	12	3	Some	12	33			
76	Lobulated	" . .	16-19-24	3.7	0-90	1.584	"	62.00	"	3½	3	None	None	33			
77	Nodulated	Inside bloodclot, outside oxalate.	18-31-40	10.2	0-175	1.117	"	39.36	"	2	3	"	"	33			
78	Smooth	Inside uric acid, outside phosph.	28-36-44	25.5	1-56	1.368	"	117.61	"	4½	2	"	"	33			
79	Mammillated	Oxalate . .	14-20-25	2.2	0-52	1.505	"	15.74	"	1	Many	"	"	33			
80	Smooth	" . .	22-45-46	22	0-457	1.353	"	72.00	"	2	2	"	"	33			
81	Rough, mammillated	" . .	9-12-18	1.3	0-19	1.008	"	21.00	Radiating	1½	Many	"	"	33			
82	Smooth	Phosphate . .	18-19-22	3.6	0-56	1.013	Intermediate	49.50	Coincident	1½	2	"	"	33			
83	"	Uric acid . .	17-23-30	6.5	0-129	1.292	Short	57.00	"	2½	2	"	"	33			
84	Nodulated	Oxalate . .	23-26-32	9.1	0-245	1.753	"	162.36	"	9	2	"	"	33			
85	Smooth	" . .	26-32-50	24	0-410	1.107	"	89.11	"	3½	2	"	"	33			
86	"	Combustible, further examination necessary.	35-38-46	27	0-429	1.031	"	34.12	"	1	2	"	"	33			
87	Mammillated	Oxalate . .	10-13-19	1.4	0-26	1.209	"	89.11	Radiating	4	3	One	6	33			
88	Nodulated	Phosphate . .	16-22-27	5.1	0-107	1.366	"	91.50	"	5	4	None	None	33			
89	Smooth	" . .	18-26-32	8.2	0-170	1.351	"	103.37	"	5	Many	"	"	33			
90	"	" . .	26-36-47	23	0-405	1.147	"	31.50	Coincident	1	2	"	"	33			
91	"	Oxalate . .	16-21-30	5	0-99	1.238	"	36.74	Crucial	3½	Many	"	"	33			
92	"	" . .	22-28-32	9.8	0-232	1.675	"	135.75	Coincident	8	2	"	"	33			
93	Rough, mammillated	" . .	16-27-32	6.7	0-141	1.379	"	26.24	"	1½	2	"	"	33			
94	Smooth	Phosphate . .	10-13-25	1.8	0-38	1.375	"	49.50	"	2	2	"	"	33			
95	Nodulated	Inside uric acid, outside oxalate mixed with uric acid.	22-24-27	7.7	0-192	1.024	"	185.74	"	7½	3	Two	24	33			
96	Mammillated	Phosphate with small amount of oxalate mixed in	15-16-26	2.9	0-54	1.218	"	44.50	Radiating	2	Many	None	None	33	None	None	Jefferson Medical College.
97	Smooth	" " "	8-9-10	0.3	0-7	1.520	"	15.74	"	¾	"	"	"	33			
98	"	" " "	7-8-9	0.2	0-4	1.302	"	31.50	"	1½	"	"	"	33			
99	"	Inside uric acid, outside phosph.	16-18-29	4.9	0-86	1.143	"	36.74	Coincident	1	2	"	"	33			
100	"	Oxalate . .	17-20-23	4.1	0-93	1.477	"	89.11	"	5	2	"	"	33			
101	Nodulated	" . .	18-30-35	8.6	0-202	1.537	"	98.61	"	4¼	2	"	"	33			
102	Rough, nodulated	" . .	21-22-24	4.4	0-106	1.584	"	210.00	"	13	2	One	72	33			
103	Mammillated	Inside uric acid, outside oxalate, and phosphate.	13-21-30	4.5	0-97	1.418	"	74.50	Radiating	3	Many	None	None	33			
104	Rough	Oxalate . .	18-21-27	1.6	0-125	1.770	Intermediate	126.75	Coincident	5	2	"	"	33			
105	Smooth	Fatty substance inside, outside oxalate.	12-13-14	1.0	0-33	1.343	"	98.61	Radiating	4	3	One	12	33			
106	Rough	Oxalate . .	16-35-39	10.3	0-227	1.435	Short	93.87	"	3½	3	None	None	33			
107	Smooth	Uric acid . .	23-33-40	18.3	0-458	1.630	"	140.25	"	3	Many	"	"	33			
108	"	" " . .	22-32-40	17.3	0-437	1.645	"	77.00	"	2½	"	"	"	33			
109	Rough	Phosphate . .	18-22-34	7.3	0-138	1.231	"	89.11	Coincident	3	2	"	"	33			
110	Smooth	Oxalate . .	43-53-70	79.5	3-336	1.302	"	129.00	"	4	Many	"	"	33			
111	"	Phosphate . .	33-34-39	23.8	0-448	1.253	"	72.00	"	2	2	"	"	23			
112	"	" . .	23-25-26	7.6	0-141	1.208	"	47.00	"	1½	3	"	"	33			
113	"	" . .	21-22-36	7	0-133	1.247	Intermediate	49.50	"	1	2	"	"	33			
114	"	" . .	22-23-25	6.9	0-130	1.227	Long	36.74	"	1	3	"	"	33			
115	"	" . .	19-20-29	6.5	0-112	1.122	"	53.00	"	1½	3	"	"	33			
116	"	" . .	15-17-30	4.5	0-80	1.158	Short	31.50	"	1	2	"	"	33			
117	"	" . .	13-15-24	2.7	0-42	1.013	"	34.12	"	1	2	"	"	33			
118	"	" . .	12-15-17	1.9	0-30	1.371	"	26.24	Radiating	1	Many	"	"	33			
119	Rough	" . .	12-20-28	4.1	0-67	1.061	"	39.36	Coincident	2	2	"	"	33			
120	Smooth	Uric acid . .	22-38-58	31	1-275	1.586	"	126.75	Radiating	5	4	"	"	33			
121	"	Oxalate . .	15-20-28	5.1	0-98	1.124	"	36.74	Coincident	1	3	"	"	33			
122	Nodulated	" . .	16-23-30	6.3	0-171	1.768	"	162.36	"	6	2	"	"	33			
123	"	" . .	26-34-44	21	1-97	1.789	"	93.87	Radiating	4	Many	"	"	33			
124	Rough, mammillated	Phosphate . .	20-22-44	8.5	0-173	1.325	"	133.50	Coincident	6	4	"	"	33			
125	" "	" . .	15-17-20	2.7	0-44	1.061	"	44.50	"	1	3	"	"	33			
126	Smooth	" . .	12-19-24	3.2	0-67	1.364	"	74.50	Radiating	4	3	"	"	33			
127	Lobulated	Inside uric acid, outside oxalate.	17-25-30	8.3	0-237	1.860	"	179.36	Coincident	15	3	One	6	33	}	}	}

No.	Appearance of calculus.	Composition of calculus.	Diameters, in millimeters.	Volume, in cubic centimeters.	Weight, in ounces and grains.	Specific gravity (approximate).	Axis of holding between jaws of lithotrite	Actual crushing resistance of calculus, in lbs., with Forbes' lithotrite; friction of lithotrite and testing apparatus deducted.	Direction of fracture to line of force applied.	Time slowly increasing pressure was applied to calculus, in min.	Number of fragments.	Flying fragments.	Distance fragments were thrown, in inches.	Size of lithotrite used (French scale).	Impaction of lithotrite, measured by increased size, in degrees of French scale.	Point of fracture in lithotrite.	Calculus loaned by
128	Smooth	Phosphate . .	27-29-41	16.8	0-316	1.225	Short	98.61	Coincident	2½	2	None	None	33			
129	Nodulated	Oxalate . .	13-22-25	4.9	0-113	1.502	"	242.61	Crucial	10	5	"	"	33			
130	Mammillated	" . .	7-11-16	0.7	0-16	1.498	"	49.50	Radiating	1	4	"	"	33			
131	"	" . .	11-13-17	1.3	0-26	1.302	"	39.36	Coincident	1	3	"	"	33			
132	Rough, nodulated	" . .	25-30 37	12.5	0-335	1.745	"	147.00	"	6	2	One	6	33			
133	Coral shape.	" . .	32-41-44	25	1-223	1.832	"	280.00	"	11	2	None	None	33			
134	" "	" . .	31-37-40	19	1-40	1.782	"	390.00	"	14	2	One	72	33			
135	Granulated	Phosphate with oxalate.	42-50-67	65	2-462	1.427	"	206.00	"	5	2	None	None	33			
136	Mammillated	Inside oxalate, outside phosph.	14-19-24	3.1	0-72	1.513	"	98.61	Radiating	3½	Many	"	"	33			
137	Crystalline	Oxalate . .	19-30-34	9.2	0-242	1.713	"	222.00	Coincident	9½	2	One	12	33			
138	Smooth	Phosphate with oxalate.	13-25-35	6.6	0-155	1.520	"	64.50	"	2½	3	None	None	33			
139	"	Inside uric acid, outside phosph.	25-31-45	18.4	0-385	1.352	"	64.00	"	2	2	"	"	33			
140	"	Inside oxalate, outside phosph.	20-30-36	12.4	0-321	1.686	"	124.50	"	6	2	"	"	33			
141	Rough, mammillated	Oxalate . .	20-30 42	12.3	0-264	1.398	"	89.11	"	2½	2	"	"	33			Jefferson Medical College.
142	Mammillated	" . .	9-11-16	0.8	0-16	1.302	"	47.00	Radiating	3	Many	"	"	33			
143	Nodulated	" . .	10-12-14	0.9	0-22	1.592	"	39.36	"	1	"	"	"	33			
144	Smooth	Phosphate . .	5- 6-11	0.2	0-5	1.622	"	26.24	"	1	2	"	"	32			
145	Rough	Phosphate with little oxalate.	10-16-18	1.9	0-31	1.062	Inter-mediate	31.50	Coincident	1	2	"	"	33			
146	Smooth	Phosphate with little oxalate.	8-10 12	0.4	0-8	1.305	Short	18.36	Radiating	¾	Many	"	"	33			
147	"	Oxalate . .	10-13-15	1.4	0-23	1.070	"	39.36	"	1½	"	"	"	33			
148	Rough	" . .	12-16-22	2.5	0-44	1.143	"	21.00	"	¾	"	"	"	33			
149	Shell	" . .	8-14-22	0.4	0-19	1.428	"	5.24	"	¼	"	"	"	33			
150	Smooth	Phosphate . .	41-43-50	48.5	2-288	1.509	"	238.87	Coincident	8	"	Some	30	33			
151	"	Phosphate with piece of iron in center.	26-31-46	20	0-451	1.468	"	89.11	"	2¼	2	None	None	33			
152	"	Oxalate . .	24-35-40	19.3	1-1	1.623	"	142.50	"	1	3	"	"	33			
153	Granulated	" . .	44-52-60	65.5	3-260	1.690	"	133.50	"	4	2	"	"	32			
154	"	Inside carbonate of lime, outside oxalate.	53-63-85	130	6-313	1.600	"	152.50	"	1	2	"	"	33			
155	Smooth	Uric acid . .	32-39-69	42.5	2-121	1.655	"	260.75	"	14	3	One	10	33	None	None	Dr. Reckefus, Jr.
156	"	Phosphate . .	16-27-38	9.2	0-171	1.232	"	57.00	"	1½	2	None	None	33			
157	"	Uric acid . .	13-17-21	3.3	0-57	1.125	"	82.00	"	2½	2	One	10	33			
158	"	" " . .	12-17-18	2.7	0-46	1.106	"	79.50	"	2	2	None	None	33			
159	"	" " . .	11-16-20	2.5	0-44	1.146	"	91.50	Crucial	3	4	One	12	33			
160	"	" " . .	20-31-42	15.5	0-392	1.649	"	52.00	"	1	3	None	None	33			
161	Mammillated	Phosphate . .	18-21-33	10.6	0-187	1.149	"	126.75	"	5	4	Two	20	33			
162	"	Oxalate . .	17-23-28	6.4	0-149	1.517	"	210.00	"	14	5	None	None	33			
163	Smooth	Inside oxalate outside phosph.	21-31-38	14	0-313	1.456	"	79.50	Coincident	3	2	"	"	33			
164	Smooth and nodulated	Oxalate . .	21-29 36	11	0-267	1.581	"	77.00	Crucial	3	3	"	"	33			Dr. O. Horwitz.
165	Smooth	Uric acid . .	17-34-42	13.1	0-291	1.447	"	117.61	Coincident	4	2	One	12	33			
166	Mammillated	Inside uric acid, outside oxalate.	15-20-23	3.6	0-81	1.466	"	109.11	Crucial	3	5	None	None	33			
167	Smooth	Phosphate . .	27 28-40	15.6	0-268	1.119	Inter-mediate	21.00	Coincident	1	2	"	"	33			
168	"	Uric acid mostly, outside uric acid mixed with phosphate and oxalate.	24-41-55	27.5	1-102	1.378	Short	69.50	"	1½	2	"	"	33			
169	"	Phosphate . .	32-42-50	37.5	1-262	1.288	"	59.50	"	4	4	"	"	33			Dr. J. A. Peoples.
170	"	Oxalate . .	27-47-53	38.5	1-420	1.523	"	98.61	"	4	5	"	"	33			
171	Granulated	Phosphate . .	32-40-60	38.2	1-367	1.444	"	59.50	"	2	2	"	"	33			
172	Smooth	Center oxalate, intermediate layer uric acid, outside phosph.	44-52 67	84.5	3-446	1.454	"	101.00	Radiating	4	Many	"	"	33			Dr. Jos. Hearn.
173	Nodulated	Uric acid . .	31-37-43	30	1-281	1.652	"	338.24	Coincident	5	2	"	"	33			
174	Smooth	Phosphate . .	8-15-16	1	0-22	1.433	"	31.12	"	1	3	"	"	33			Jeff. Med. Coll.
175	"	Inside uric acid, outside phosph.	25-25-31	9.3	0-160	1.120	"	72.00	Radiating	3	Many	"	"	33			Dr. A. Hewson. Dr. W. S. Forbes.
176	"	Phosphate . .	15-22-30	4.7	0-104	1.441	"	39.36	Coincident	1	2	"	"	33			
177	"	Oxalate . .	29-42-51	37	1-471	1.674	"	82.00	Radiating	2	Many	"	"	33			Dr. A. Hewson.
178	"	Uric acid with little oxalate.	15-18-27	4.1	0-92	1.461	"	42.00	Crucial	1	5	"	"	33			
179	Rough	Phosphate . .	13-19-26	2.9	0-72	1.617	"	7.86	"	½	Many	"	"	33			
180	Smooth	Uric acid . .	14-15-16	2	0-50	1.625	"	26.24	"	1	"	"	"	33			
181	"	" "	13-15-17	1.9	0-49	1.680	Long	49.50	"	1½	"	"	"	33			Dr. Jos. Hearn.
182	"	" "	13-14-17	1.8	0-45	1.628	Short	86.74	"	3	"	"	"	33			
183	"	Inside uric acid, outside oxalate.	13-15-16	1.6	0-44	1.791	"	86.50	"	2½	"	"	"	33			
184	"	Oxalate . .	13-14-16	1.4	0-37	1.721	"	49.50	"	1½	"	"	"	33			

NOTE.—I am indebted to Professor Henry Leffmann, M.D., Pathological Chemist to Jefferson Medical College Hospital, for the chemical analysis of these vesical calculi.

Attention is called to the large percentage of oxalate of lime calculi. This is probably accounted for from the fact that they had been especially cared for by their collectors, while other stones not receiving such attention were lost.

I have attempted to deduce from this table a general law for the crushing resistance of vesical calculi, considered under the heads of chemical composition, weight, size, and specific gravity, but owing to the great variation in the ages of the calculi since being removed from the bladder (from one to seventy years) and the consequent hardening or softening of the colloids due to atmospheric exposure, it has been found impracticable for the present at least. It would seem, however, as one element of the law, that there is a marked decrease in the crushing resistance of vesical calculi relatively to their size and weight as they grow larger.

The crushing resistance and other physical properties such as size, weight, etc., of the calculus are as much as its chemical composition a part of its clinical history. Hereafter by the use of this new lithotrite, having the measuring mechanism in its handle, the crushing resistance of a calculus will be recorded at the time of the operation.

Thus, in time a table may be compiled from the reports of observing lithotritists which will enable a more judicious selection of a lithotrite of proper size for the reduction of a given calculus.

It is my purpose to demonstrate from experiments the relative crushing resistance of vesical calculi and the strength of the new lithotrite. The line of safety in this new lithotrite will be pointed out by having stamped on its handle, with the maker's name, the number of pounds to which the instrument has been safely tested in a machine which has been made for this purpose, before it leaves the maker's shop.

The testing machine and the lithotrite were designed and made by my son, Mr. John S. Forbes, engineer.

I will venture to ask permission to allow him to describe them.

TESTING APPARATUS. (BY MR. JOHN S. FORBES.)

This apparatus (Fig. 1) consists first of a rigid frame of wrought-iron pipe, A; second, of a longitudinally adjustable cast-iron bridge, B, spanning the frame and secured at any point by clamps, C C. Mounted on this bridge is a universal brass clamp, D. for holding the cylindrical handle of the lithotrite,

A cast-iron bed-plate, E, spans the frame and is secured at one end of it. This bed-plate carries a rotatable shaft, F, turning in ball-bearings, whereby the friction is reduced to a minimum. This shaft also has an end movement of about one and a quarter inches. One end of the shaft is provided with an independent four-jaw chuck, G, for holding and turning the screw-handle of the lithotrite. Upon the middle portion of the shaft, and between the ball-bearings, is a flat, grooved, brass wheel, H, so arranged that it may be turned independently of the shaft or locked to it. Secured to the wheel is a cord, I, which passes over an overhead grooved pulley, J, and is provided at its dependent end with a pan, K, for the reception of weights. The friction due to turning the wheel and its accompanying parts, and weight of the pan is eliminated by the small bottle, L, containing shot. The operation of the apparatus is as follows:

A lithotrite is placed in position and its cylindrical handle clamped with the brass clamp, D, on the cast-iron bridge. The screw-handle is secured in the four-jaw chuck, G, on the rotatable shaft, and the whole is gotten in perfect line and accord. By locking the instrument and turning the wheel, H, over to the right, the male jaw of the lithotrite is propelled toward the female jaw, and by unlocking the instrument the male jaw, together with the shaft, chuck, and wheel, may be slid backward and forward just as the instrument may be operated in the hands. The result so far, then, is that we have a lithotrite held in an apparatus, and the objects are: first, to measure the crushing resistance of a calculus placed between the jaws of the lithotrite; second, to learn what pressure may be obtained between the jaws of the lithotrite without injury to them or any other portion of the lithotrite; and third, what pressure between the jaws will break them or any other part of the lithotrite. In order to obtain the crushing resistance of a calculus held between the jaws of a lithotrite we must consider mathematically the mechanical elements of the testing apparatus and the lithotrite.

We may use the formula:

$P = p \times c \times w$ in which P = equals the pressure between the blades; p = the pitch of the screw in number of turns per inch; c = the circumference of the wheel, H, of testing apparatus; w = the weight in the pan, K, of the testing apparatus.

Thus it will be seen that the forces are inversely as the paths.

Now this will give us the theoretical pressure between the jaws, but we must consider the friction in the lithotrite arising from the screw-thread and the tendency of the male blade to buckle. In order to obtain this friction we place a dynamometer, or other pressure-recording instrument, between the jaws and apply weights to the pan of the testing apparatus. In this way we will get the coefficient or ratio of friction in the lithotrite to the weight applied for various pressures between the jaws. We can therefore lay out a table of actual frictions for each pressure. The formula must now have the factor of friction introduced, and it may be expressed thus:

$P = (p \times c \times w) - (F\ w)$ wherein F = the friction corresponding to the weight, w. The dynamometer is now removed and we are ready to measure the crushing resistance of any given calculus. The table of crushing resistance of vesical calculi which is before you was obtained in this way. In order to obtain the second and third objects, viz: the pressure which may be obtained between the jaws of the lithotrite without injury to any part of the in-

strument, and what pressure and where the instrument will first give way, we again make use of the dynamometer and apply weights to the pan of the testing apparatus until something happens, for something is bound to occur if we apply enough weights. The dynamometer ceases to move when this event takes place, and we read the ultimate pressure which the now useless lithotrite was able to record. In this manner the table of the strength of various lithotrites which is before you was obtained.

DESCRIPTION OF LITHOTRITE. (BY MR. JOHN S. FORBES.)

This lithotrite (Fig. 2) has some of the elements that are common to the Civiale, Thompson and

FIG. 1.

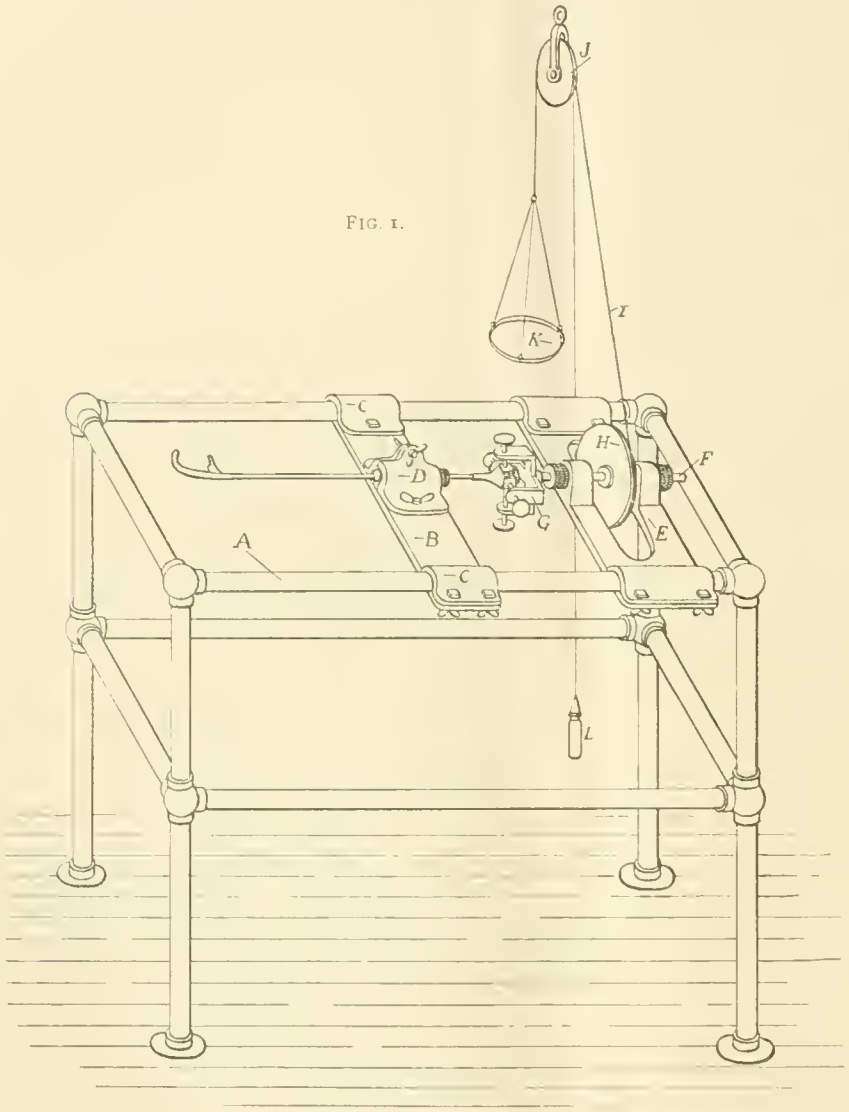


FIG. 5.

FIG. 6.

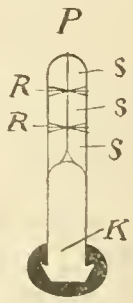


FIG. 7.

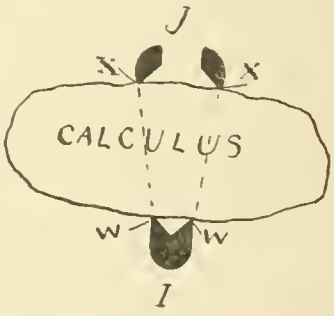


FIG. 8.

FIG. 2.

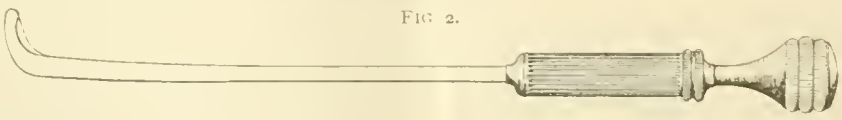
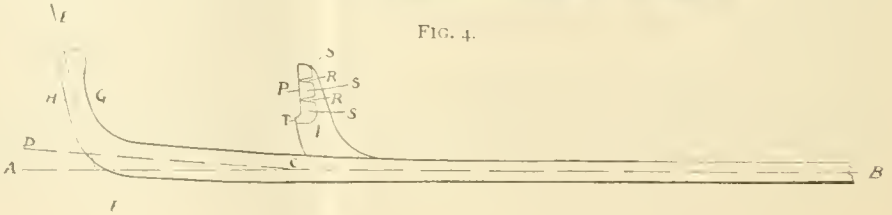


FIG. 3.

FIG. 4.



Bigelow instruments, viz: a pair of jaws capable of being separated and brought together and a handle mechanism for their operation. The construction and general lines of it are, however, entirely original and widely different from any lithotrite now in existence. It may be thus described:

The penile and vesical end consists of a male blade sliding within a female blade and held within the latter by means of a slightly angular under-cut slot, Fig. 3.

This is done to prevent the male blade rising out of the female when under a strain, so that the greater the strain the tighter the male blade is held within the female. The long axis, B C, Fig. 4, of the shaft is straight from the handle to within about two inches of the crook or curve; here it rises, C D, at an angle of about five degrees until it meets the curve.

This accomplishes six important objects: First, it gives an easy introduction of the instrument through the urethra, because of a wide angle. Second, it increases the strength of the female jaw by giving it support higher up. Third, it allows a larger stone to be grasped without incurring a long female jaw. Fourth, it places the metal of the female shaft where it is most needed to give strength. Fifth, it prevents side movement or twisting of the male jaw by giving it a deeper slot to move in, and thereby supporting it higher up, for the male blade works in a straight slot along the axis, A C B. Sixth, the angle between the axis, E F, of the female jaw and the long axis of the shaft, A C B, is the same as if the shaft were straight all the way to the curve.

The female jaw has its proximal surfaces concave, G, preventing the calculus from slipping out when the power is applied, and tending as well to drive the calculus lower down, thereby placing it in a position where the instrument gains strength. The female shaft is elliptical and of uniform size from the handle up to within about three inches of the crook; here it begins to increase slightly in caliber until it reaches the maximum which is at the crook (Fig. 4). This results in great strength for the female shaft at the point where it is most needed, and at the same time places the extra metal within the bladder and within the prostatic portion of the urthera only, where it is easily accommodated.

The shoe of the female jaw (M, Fig. 5) is made abundantly larger than the male jaw, so that all débris is expelled, and impaction of the instrument prevented, and the wall of the bladder is thus protected from being pinched or cut (Fig. 5). The female blade is elliptical in cross-section (Fig. 6), in order to give a thick septum, K, to the male blade, and yet not increase the caliber of the shaft (Fig. 6). The female jaw is made thin in a fore-and-aft direction (G, H, Fig. 4), in order to take up less room in the bladder. The proximal surface (P, Fig. 5) of the male jaw is in the form of a wedge of about sixty degrees, in order to penetrate a calculus with the least power propelling it. The cross ridges (R, R, Figs. 4, 5, 6) prevent the stone from flying when broken, and the parallel spillways (S, Fig. 4, 6) permit the débris to escape without causing impaction of the instrument.

Sir Henry Thompson, in his book (*The Urinary Organs*, note 1, page 79, says: "Only slight approximation to the form of the wedge in the opposing surface of the male blade is permissible. If it has an angle, say, of ninety degrees, some danger is incurred. It may be driven through almost any stone, it is true, but the fragments will fly off right and left with prodigious force, even in fluid, and injure the coats of the bladder. Also, when the male blade has the form of a rather sharp wedge, the calculus is seized, and retained with greater difficulty than with a male blade which is less salient."

Perhaps he does not realize it, but after saying the foregoing he has deliberately designed and adopted a wedge in his instrument of less than ninety degrees; in fact, a wedge of forty-five degrees, with no means whatever beyond it to prevent the fragments flying (W, W, Fig. 7). A great deal of the success of his instrument is owing to the sharp wedge, of which he is evidently not aware, for it allows his instrument to cleave a stone with less force propelling it, and when anything is disrupted with a small force the energy stored up in the parts so separated is less, and they will come to rest sooner. The iceman, with a thin-bladed axe, splits the block of ice gently and with ease, and the parts so separated do not fly. What would happen if he used the broad head of an axe?

As regards the alleged difficulty of seizing and retaining a calculus with a sharp single wedge, it is a well-known fact that an uneven object adjusts itself more readily to three points of contact than four. More especially is this true when the three points form apices of a triangle. Moreover, it may be said that out of 184 vesical calculi crushed by this lithotrite in the testing apparatus, not one slipped in the least, except to adjust itself lower down on the female jaw, owing to the concave surface of that member, as already mentioned. I greatly doubt if all four of the opposing edges (W, W, X, X, Fig. 7) in the Thompson lithotrite are at the start in contact with a calculus.

The spur (T, Fig. 4) rises to a great height on the male jaw to give it greater strength. This spur interferes in no way with the holding of the stone.

The great breadth of the septum (K, Fig. 6) of the male blade is permitted by the elliptic shaft.

The handle or screw mechanism belongs to what is known as the interrupted screw-type. It consists of an internally screw-threaded barrel (Fig. 8) having the threads cut away for the entire length of the barrel at alternate spaces of ninety degrees each.

This screw-barrel has an end movement in the cylindrical handle of about one-sixteenth of an inch. Working in this barrel is a pair of screw-blocks, likewise having their screw-threads interrupted at alternate spaces of ninety degrees each. Thus the screw-blocks may be slid up and down the barrel without the threads engaging. When it is necessary, however, to apply the power, the screw-blocks are turned by means of the screw-handle, and the threads engage immediately. One screw-block is rigidly keyed to the screw-handle shaft, and the

other is so formed that it may have a motion of ninety degrees around the screw-handle shaft. Thus, when the screw-handle shaft is turned to the right the screw-block that is rigidly attached to the shaft is brought into mesh with the threads of the screw-barrel, and a further turn of the handle of ninety degrees brings the rotatable screw-block also into mesh. The screw-threads on these two blocks are, therefore, now no longer interrupted, relatively to the barrel, but continuous, and we have in substance a solid plug, or screw-block, engaged with the threads in the screw-barrel. As long as the screw-handle is turned to the right this state of affairs continues, and the male jaw is propelled toward the female jaw. After the calculus is crushed the instrument may again be unlocked and the jaws separated by turning the screw-handle to the left until it stops. This left-hand motion is never more than half a turn. Owing to the sixteenth-inch play of the screw-barrel in the cylindrical handle it readily adjusts itself to engage with the thread of the screw-block, and the calculus is, therefore, never dropped (perhaps after a hard search for it) in locking the instrument. The screw-thread of this instrument has been made slow for several reasons. First, it increases the power of the instrument for crushing, because it brings in the well known and important factor of time in crushing the calculus. A certain pressure may be applied to a stone without crushing it, but if the same pressure is allowed to remain acting upon the stone for a short time the stone will crumble without the addition of further pressure. The slow thread is, therefore, adopted that the stone may have time to break without unduly straining the instrument. The operator is also spared using an

TABLE OF COMPARATIVE EFFICIENCY OF LITHOTRITES.

No.		Kind of lithotrite.		
		Forbes.	Bigelow.	Thompson.
1	Size of lithotrite—French scale	No. 33	No. 33	No. 29
2	Pitch of screw (in turns per inch)	14	4.57	4
3	Character of screw-thread	Single	Triple	Quadruple
4	Diameter of screw-handle in inches	1.025	1.3125	1.3125
5	Theoretical pressure, in pounds, between jaws of lithotrite for one pound in pan of testing apparatus (wheel of apparatus being 18" in circumference)	252	82.27	72
6	Actual pressure, in pounds, between jaws of lithotrite for first pound in pan of testing apparatus, as registered by dynamometer	42	32	30
7	Per cent. of friction in lithotrite for first pound applied; the actual friction increases by an almost constant increment for increased loads for all types of lithotrites	83.3	61	58.25
8	Constant, for decrease of pressure between jaws of lithotrite, for each additional pound applied to the pan of testing apparatus	1	0.5	0.5
9	Average crushing resistance of ten plaster-of-Paris cylinders of uniform size. All crushed through same axis to determine the comparative penetrative qualities of the various lithotrites. Actual effort in pounds between jaws	128.64	156.48	147.50
10	Relative penetrative efficiency, due to the form of jaws, as deduced from No. 9, compared with the Forbes lithotrite	1.000	0.822	0.872
11	Actual pressure, in pounds, between jaws of lithotrite for first pound of rotative force applied to screw-handle	11.93	7.34	6.88
12	Constant for decrease of pressure between jaws of lithotrite, for each additional pound of rotative force applied to screw-handle	0.28	0.11	0.11
13	Relative crushing effect of lithotrites on a calculus for first pound of rotative force applied to screw-handle, deduced from Nos. 10 and 11	1.000	0.505	0.502
14	Relative operative strength of lithotrites as deduced from their penetrative efficiency and gross strength	1.000	0.651	0.652 No. 33 F.

TABLE OF COMPARATIVE STRENGTH OF LITHOTRITES.

Kind of lithotrite	Size of lithotrite, French scale.	Greatest pressure, in lbs., from which lithotrite would recover shape, or remain operative	Ultimate pressure, in lbs., required to bend, break, or make lithotrite inoperative.	Effect of ultimate pressure.	Shown in
Forbes	No. 33	600	650	Female shaft bent down 1¾" from end; ends of flanges of male jaw slightly torn; instrument can be closed completely and withdrawn from bladder	Fig. 9
Forbes	No. 29	484	525	Instrument this size not tested; figures were calculated and therefore only approximate.	
Bigelow, with Forbes male proximal surface and V groove	No. 26	345	358	Female shaft slightly bent down 1¼" from end; female jaw broken through on one side of fenestrum; instrument can be closed and withdrawn from bladder.	Fig. 13
Bigelow	No. 33	488	495	Male jaw snapped off at top of spur with great force, flew 12 feet; locking rods in handle slightly bent; instrument can be closed and withdrawn from bladder	Fig. 10
Bigelow	No. 29	381	400	Male jaw snapped off at crook with force; female jaw snapped off near top of fenestrum with force; instrument can be closed and withdrawn from bladder.	Fig. 11
Thompson	No. 33	449	472	Instrument this size not tested; figures were calculated, and are therefore only approximate.	
Thompson fenestrated	No. 29	355	382	Female shaft badly bent down 1¾" from end; screw thread slightly burred; instrument cannot be closed within 1½".	Fig. 12

NOTE.—The conditions of these tests were identical, and the resistance of the dynamometer was applied between the extreme ends of the jaws. The Forbes and Bigelow instruments were made by Tiemann & Co., of New York, and the Thompson fenestrated by Weiss, of London

undue amount of strength, for with him it is the old story of 33,000 pounds one foot high in one minute, or one pound 33,000 feet high in one minute. The screw-handle has been made larger than heretofore, because it has been ascertained that any stone will give way before the instrument suited to it is damaged, and a large screw-handle aids the easy and gentle manipulation of the instrument. The shape of the handle is also different, and calculated to serve its purpose. Being made of very thin sheet-metal it is at once strong, and as light as the lightest handle now employed, which is, perhaps, the soda-water-fountain wheel of Thompson or Civiale. I have designed a mechanism which may be placed within the hollow screw-handle, whereby the operator can see what power he is exerting between the jaws of the lithotrite. This mechanism, though it will add a trifle to the weight of the lithotrite, will not increase its size in any part. To sum up this instrument, it may be likened to a chain in which each link is of equal strength, and that means the maximum strength for a given size and weight, or, in other words, a correct disposition of metal.

Messrs. George Tiemann & Co., of New York, will make this instrument, and it is proposed to place this testing apparatus in their workshop, where every instrument, will, before it leaves the shop, be tested to a proper pressure in accordance with its size, and the pressure it has been so subjected to stamped plainly upon the handle. Thus the surgeon may operate with the greatest confidence in his lithotrite, knowing the pressure it has been subjected to and the crushing resistance of the hardest calculus thus far obtained by us, as indicated in the table.

As a final result of this series of experiments, which have been conducted with the utmost care and impartiality, we may draw several conclusions. First, as regards the lithotrite, its shape and action: After seven operations on the living subject it has demonstrated its complete fitness. It has broken a hundred and fifty-eight calculi while in the testing apparatus, and it has been subjected to a pressure of five hundred pounds between the jaws for thirteen times. Its ultimate strength after this trying ordeal was six hundred and fifty pounds, and, moreover, after this enormous pressure the instrument was closed and could have been introduced and withdrawn from a human bladder with ease and without injury to the parts. As regards the calculi crushed to make the table which is before you, it may be stated that the large majority were many years old and much harder than they would have been if only recently taken from a living subject. The greatest resistance offered by any calculus so far encountered by us was four hundred and six pounds. (No. 27.)

FIG. 9.

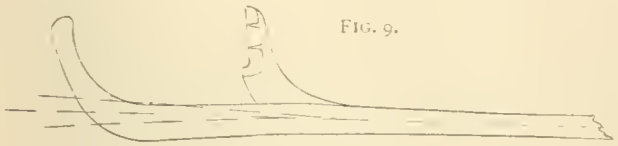


FIG. 10.

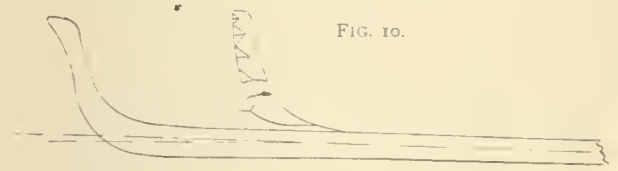


FIG. 11.

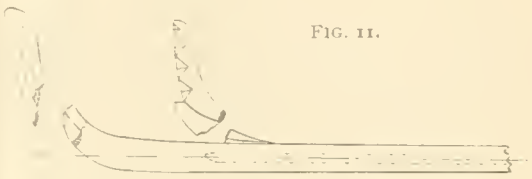


FIG. 12.

FIG. 13.

SYNOPSIS OF CONSTRUCTION OF THE LITHOTRITE. READ BY DR. W. S. FORBES.

1. Designed with the view of meeting, first, the anatomical conditions; second, conforming to the laws of mechanics, special attention being given to the economic disposition of material.

2. Double curve, permitting easy introduction, giving greater strength to the female shaft and jaw, and better support to resist side movement of the male jaw.

3. Elliptic cross-section of the shaft, to give greater breadth of septum, prevent side movement of the male jaw, and be of minimum circumference.

4. Angular undercut slot or V groove, to prevent the male blade from rising out of the female shaft and to bind the two closer together under strain.

5. Concave shape of the female proximal surface, to prevent the calculus slipping out, as well as to drive it down to the lower part of the curve and so gain strength for the female jaw.

6. The female jaw made flat in a fore-and-aft direction, to take up a minimum amount of room in the bladder.

7. Large clearance between the outside of the male jaw and the inside of the female jaw, to prevent injury to the bladder, and impaction.

8. All exposed edges gently rounded to prevent injury to the bladder.

9. All internal corners rounded to avoid starting cracks.

10. Shape of the male proximal surface strategic, *i. e.*, best adapted to the more easily penetrate a calculus, to keep fragments from flying and clear itself, to prevent impaction.

11. Plea for the slow thread (strain on the instrument and work done by operator reduced to a minimum and time gained).

12. Plea for the large screw-handle ; it is not too large because few men can break an instrument with it ; moreover, the instrument as constructed will break any calculus before it is injured itself. Metallic, hollow, and very light.

13. Interrupted screw-mechanism. It is stronger, less complicated, and easier to operate.

14. Cylindrical handle, same size as Bigelow's, and of proper size to allow of holding tightly.

15. Power-recording mechanism in screw-handle, to measure strain on lithotrite and crushing resistance of calculus.

16. The size of the instrument is one and three-quarter inches shorter than the Bigelow of equal caliber and opening, and five-eighths of an inch longer than Thompson's of equal caliber and opening.

17. The weight of this instrument is the same as Bigelow's and a trifle more than Thompson's of equal caliber and opening.

Owing to the kindness of Messrs. George Tiemann & Co., of New York, in executing the thoughts of my son and in following his drawings and models in the various evolutions to the final instrument, which is now brought before you, and in supplying the already existing types of instruments for testing, he has been enabled to carry these experiments to a higher degree of refinement than my purse would otherwise have allowed.

During the crushing of these calculi there were present on various occasions the following gentlemen: Dr. G. M. Gould, of The Medical News, Prof. Frederick P. Henry, Prof. Harrison Allen, Dr. A. Hewson, Prof. Joseph Hearn, Dr. Charles H. Reckefus, Jr., all of Philadelphia. During the breaking of the lithotrites in the testing machine there were present Professor Orville Horwitz, and Dr. A. Hewson, Demonstrator of Anatomy, Jefferson Medical College.

A word, and I have done—a word, but a necessary one. I know that I incur the risk of displeasing my son in what I am going to say ; but, in this body of men and on this occasion, I trust a father may be pardoned for venturing to digress from the injunction of his son.

In the paper I have had the honor of reading every thought, every idea expressed, indeed, the entire habendum of the paper, came from and belongs to my son, Mr. John S. Forbes, mechanical engineer.

1704 Walnut Street.

INEBRIETY AS A DISEASE, ANALYTICALLY STUDIED.[1]

By R. M. PHELPS, M.D.,
of Rochester, Minn. ;
Assistant Superintendent Rochester State Hospital; Member American Neurological Association, etc.

During the last year, basing my convictions on the study of nearly two hundred inebriates who have been committed to this Hospital, I presented to the State Medical Society the subject of "inebriety," especially considering whether or not it deserved the name disease. This especial consideration is needful, not to establish or controvert the fact, but because of the somewhat logical deduction drawn from such designation by various writers, and secondarily by the people also as to the "irresponsibility" of inebriates.

The subject is difficult to define because of the symmetric character of the frequent brain-impairment ; because of the vagueness of the secondary pathology ; and because definitions pushed back to their fundamentals, here sooner than elsewhere, reach the inexplainable. Some of the advocates of the disease-theory have held to me that the subject needs still farther analytic study. The logical conclusions which are drawn from the statement that "inebriety is a disease" comprise the responsibility of action of many hundreds of thousands in this country, and are therefore highly important. I will first quote a few paragraphs from the preceding article mentioned to show the stand there taken.

Speaking of the writings of the Association for the Study and Cure of Inebriety it was said : "The trend of the literature, however, is not so vague, and is quite plainly toward inebriety as a disease of the brain, resembling insanity or constituting insanity. While hesitating to call inebriety an insanity, except in occasional cases, the writers yet hover about this idea as one giving most significance to their statements."

Definition was given as follows: "We might define inebriety, as far as it deserves the name of disease, as including those cases in which the drinking of alcoholic liquors, either from inherited appetite, from inherited predisposition, or from acquired habit, becomes accompanied by apparently uncontrollable impulse or by mental defects, such as *amnesia*, *trance-state*, *transitory mania*, or by the more chronic *dementia*. But this definition merely defines an insanity, so that we tend, as does the current literature, toward making inebriety merely an insanity, having drinking as its most prominent exciting cause.

[1] This article was prepared for the twentieth annual meeting of the American Neurological Association, held at Washington, D. C., May 29 to June 1, 1894, but was not read on account of the absence of the author.

"But, although we have made our ideas far more clear, we have still exceeding great difficulty in making the practical application at hand. For it is hard to say *who* has the mental defect and *when* one's will-power is overborne. Dr. Crothers tries to find these defects in *all* of those who try to use alcohol to excess. He pictures as strongly as he can a kind of dulled moral sense, dulled mental power, and dulled will-power gradually overcoming the victim.

"But even granting that there is dulling of mental and moral keenness in all drinkers, commencing theoretically with the first drink, and increasing proportionately to the amount and duration of the drinking, yet should we not hesitate to call a man insane or irresponsible until signs of insanity are so distinct as to be clearly formulated?"

Concerning the predisposition it was said: "One man has a genius for music, another could not do the same work after a lifetime of study. One man is alert and nervously active, always in action, another slow and steady-footed, and could not by any training attain the genius-like standard of others. In like manner one has that nervous susceptibility that is excited and weakened by alcohol, while his comrades, with the lifetime of habitual association with alcohol, are never drunk. One may possibly call it disease, but as purely a tendency in itself; I can hardly think it a vice or disease, but rather a defective constitutional state. So much for the tendency itself. The habitual yielding to that tendency I should call a *vice*. The diseased condition following, be it mental, physical, or both, I should call a *secondary disease;* if it is mental I should call it *insanity*.

"From the above it will be seen that the yielding to the habit-element is on exactly the same plane as yielding to swearing or pernicious habits of any kind."

A study of the present attitude of the profession reveals something like this: *The Journal of Inebriety* and occasional articles elsewhere by the same class of writers, prominent among whom have been Crothers, Kerr, Wright, Mason, Hughes, and Parish, hold, though in varied meanings, that inebriety is a disease. The prominent neurologists of the country have hardly well defined their position, the subject being somewhat neglected. Dana, in two or three articles, has seemed to call for more conservative views, and has set forth distinctions tending to exhibit the fallacy of classing all inebriates alike.

So many disputes of the past have depended upon differences in meaning attached to the same word that we begin first with definition. "Inebriety" may have four stages: First, taking first or occasional drinks; second, drinking to produce tipsiness or occasional drunkenness; third, drinking to excess, which means frequent and habitual intoxication; fourth, drinking, seemingly uncontrollable, with occasional periodicity of manifestation.

This division is one of degree, and we hold is better than one of "amount drunk," or "duration of habit," or "purpose in drinking."

Now it will hardly be contended that the first stage is a disease, rarely that the second is a disease, while stages three and four, especially the latter, seem to be most frequently meant by writers, though unfortunately they do not often so limit their meaning.

But before going farther we must also define "disease." In looking over writings we find that disease is used to mean usually, 1st, a clinical entity exclusive of other entities, such as measles, smallpox, rheumatism, etc.; but that it is occasionally used to designate, 2d, a more subordinate element or symptom, such as pain or headache; and again a little differently it may mean, 3d, groups of mental symptoms which are thought to have special lesions, though these may not be demonstrable. Defects or neuroses are *not* usually called diseases.

By "habit" we may refer to actions, which by repetition have become far more apt to be reënacted than those not so repeated. The action so designated may have first, only the *mental excitement* or incitement, as in swearing or lying; or secondly, it may have also a *physical craving*, natural or induced, which shall make it more binding. Smoking has a small and vague amount of this physical element, but drinking has a quite large amount. The habit part does not cease, however, because the physical craving comes in.

By "vice" we mean an action or habit which in the judgment of the one acting has evil tendencies. It is a matter of difference of judgment at times, whether a special act is a vice or not (for example, smoking).

Now with our terms defined, what is inebriety, "vice," "habit," or "disease"? May not inebriety be any or possibly all? The first drinking could hardly be a disease; it has hardly become a habit, and it is a vice only if the evil is recognized as such by the drinker. In the second stage it is probably becoming a *vicious habit*, while in the the third or fourth stages the habit seemingly grows stronger and is bound by induced physical failure which had been gradually invading the system. This outlines the *ordinary* case.

Let us separate inebriety into still finer elementary parts. Inebriety may be *caused by* insanity. It is then merely a symptom of an unstable mind, and is the true irresponsible state, though not a disease *of itself* then.

Again, inebriety may be caused by a physical disease, not in any mysterious way, but to relieve pain

or depression. The physical disease then is a temptation. Again, inebriety may induce mental disease. This seems sure, as there is a quite distinct degenerative type so produced. But, is not such mental disease secondary—just as a pneumonia would be secondary to exposure to cold? Frequently the preceding causation cannot be clearly outlined, and the forms are mixed, but the principles remain the same.

But, it will be said that we have left out of our analysis the "hereditary" cases; the "uncontrollable" cases, and the "periodical" forms. As regards heredity, I have not among two hundred of the worst cases in the State seen any marked cases of *direct* heredity. But, by heredity is usually meant the inheritance of defective nervous make-up, which may in the descendant bring epilepsy; or excess in appetite; or mental disease, etc. Of this *indirect* heredity there are a considerable number of cases. This was quite thoroughly brought out in an article by T. D. Wright, that prolific writer on inebriety. In this we believe thoroughly, and have many examples. This kind of heredity, however, only increases the tendency. It only makes the habit more easy. It does not truly constitute any disease, any more than tuberculosis in the parent makes the son diseased. It simply makes disease easily acquired. We all have more or less of tendency or neurosis toward one disease or another, and though by microscope or scalpel we cannot find predisposition, we do not deny its existence.

As regards "uncontrollableness," the appetite grows surely more and more strong, but it is a little rash to say that it is *fully* uncontrollable unless the man is insane. By the study of cases under the restraint provided here, I have come to think that they have always some control left; although the pitiless surety of chances that they will again drink if free is remarkable. I would, then, personally deny absolute uncontrollablenes, and admitting an approximation would not admit it to be a disease-entity, but only symptomatic of both the habit and the natural or induced nerve-changes, and instability of nerve or brain.

"Periodicity" is a mysterious element, which has ever been regarded as clinching the disease-argument. But if we study periodicity by itself we find it prominently in insanity in from one-eighth to one-fourth of all cases. We find it in epilepsy, migraine, malaria, and in the physiologic function of menstruation. Nay more, there is in most diseases a tendency to spontaneously recede and the liability to another attack.

Periodicity in its extreme form in inebriety has not been seen in much more than 2 per cent. of the cases here. In modified and irregular forms, hardly noticeable as periodic, it is seen in a good many more. But at any rate, admitting its mysteriousness, I am inclined to consider it only one sign of a neurotic or nervously unstable temperament; and whether it appear in migraine, epilepsy, insanity, or inebriety, to be the same in kind, and in the latter to be an accompaniment of the drinking rather than any element of it. The periodicity in some cases I have studied was inherent in nervous instability, in the neurasthenic attacks, or whatever they may be called, which in turn induced the drinking. It was a physical or emotional state which recurred. The inebriety followed if opportunity offered as an element of relief for the nerve-unrest.

We have now considered most of the elements entering into inebriety. In none of these forms is inebriety (drinking) a disease-entity, though it is in some a disease-symptom, and in many or all the cause of impairments of nerve or brain, which in the end may be grouped together with other bodily impairments, and designated as a disease, called inebriety.

It remains now to try and make our meaning a little more clear by noting the steps which a drinker successively takes. He takes a first drink; the reason is probably a mixture of sociability and desire of emotional excitement. If of unstable nerve-condition it affects him much; if more normal, but little. He repeats the act at various times, and finally becomes drunk. This is to him simply an undesirable ending, the emotional and nerve-exaltation and the sociability being still the ends sought. Habit, as everywhere holds its power, and a strong craving is at times recognized. Years pass, and so many times and so frequently has intoxication occurred that it is called uncontrollable. The nerve-instability, if not originally present, has been induced. The emotional exaltation and social pleasure are but a flicker now. But the nerve-depression to which he sinks *without* any sustaining liquor, are now the main elements he flees from.

In this the worst case, has habit gone? Has vice gone unless the man be definitely deserving of the name insane? Judging not from the inebriety, but from the ordinary evidence, I hardly think so; though I can readily see that they have sunk to a subordinate place.

For complete answer as to sanity, we can judge only by placing the man in favorable circumstances, and away from drink; if then insane, so judge him. If not, then do not call him so, nor infer that he is so, because of inebriety. My concluding point, thus is, judge of insanity or irresponsibility by ordinary rules, and not by the fact of inebriety.

In conclusion I quote a paragraph from a previous writing, concerning the ordinary inebriate state:

"Some years ago I watched and cared for some

morphin-eaters through the agonies of abrupt withdrawal of morphin. What I witnessed then I called intense unrest; an intense hunger of the nervous system for support. It is this hunger and unrest in kind, I think, that comes on many inebriates paroxysmally, and impels them to drink. It is to a degree a neurasthenic state. Nor do I think it peculiar to inebriates. The exhaustion of mental labor without exercise seems allied to it. The nervous system blindly hungers for something to brace it up, which the liquor temporarily does. This admits, of course, the existence of a gradual impairment of nerve or mind from drinking; theoretically, it is, perhaps always present, as some seem to claim."

"Practically we are obliged to speak of inebriety as having a tendency toward such impairment, sometimes observable, at other times not."

The preceding discussion would be of little value if disease were not held by the writers of the only medical inebriate society in this country to be to a certain degree synonymous with irresponsiblity. With this in mind, clear ideas assume vast importance. We have not discussed the pathology of alcoholism, as it is to a great extent secondary, like that of other secondary diseases.

We hold that physical or mental cravings (temptations) are not to exclude habit or intent any more in inebriety than in sexual excess, in criminal life, swearing, smoking, etc. Whether the habitual burglar is any less criminal because of his habitual practice than in the first act of burglary, it is hard to say. The law usually holds him more rigidly, but it does so for society's safety, rather than on account of any idea of the person's increasing responsibility. I would grant freely grades of responsibility, but would think human judgments and human laws not perfect enough as yet to allow for them. I would consider insanity from alcoholic origin as of slow growth. In most cases it passes slowly the arbitrarily adjudged lines between sanity and insanity. Moreover, it is usually of that symmetric type of failure that is so little noticed at first and so hard to define.

In order to show the standing of the disease-advocates as truly as possible, we quote one of the latest and clearest of their statements.

The *Journal of Inebriety*, October, 1893 says: "Inebriety is a psychopathic disease, and no theories which assume a degree of health up to a certain border line, and disease beyond this, are of any value. We have persistently urged the full recognition of inebriety as an organized, progressive degeneration. All half-vice and half-disease theories mean faith-cures and hospitals, pledges and specifics, drugs and punishment, as means of cure and treatment. The term inebriety must be recognized in the same way as insanity is, and be used to designate a disease in which the use of narcotic drugs is a symptom."

We can answer best this view by stating our own.

First. We do recognize inebriety (meaning the resulting condition) as a disease, in much the "same way" as insanity. As far as judging whether it be a disease or not, and as far as thinking of both in many cases as gradually growing impairments, we do, but not as regards their origin. It would seem if ever there was a vice, it was in the first drinking; provided of course its hurtful nature is known.

The disease inebriety (meaning again the varying and complicated combinations of effects produced by drinking) has been compared in its origin to that of lead-poison. Each would be a "progressive" impairment, initiated and increased by repeated acts, in the one case vicious, in the other not. Neither would be called a disease in the first contact with the poison. Each would be called disease when a combination of well-defined symptoms appears.

Second. That inebriety is an "organized progressive degeneration" we would amend by substituting the statement that *progressive inebriety* (progressive drinking) *produces progressive toxic degeneration*, which affecting the whole nervous system may show itself most in the brain in the form of insanity, or most in various peripheral symptoms. We would think of its action in accordance with Strümpell's views as summarized in the *Journal of Mental and Nervous Diseases*. Speaking of delirium tremens and heart-failure, he says, "they are due to a summation of minute toxic effects, just as wrist-drop and epileptic seizure are due to the summation of exceedingly small quantities of lead absorbed daily. The toxic effects of alcohol, a readily oxidized substance, cannot be due to an accumulation of toxic material, but a change of structure resulting from its chemical action on nerve tissue. From an insignificant alteration, a chronic pathological condition gradually results. Comparatively small amounts of alcohol taken regularly and habitually are as effective as an oft-repeated, severe, acute intoxication. As in other acute and chronic intoxications, there is a pronounced difference of individual disposition to the action of alcohol, and undoubtedly a different individual disposition of the internal organs also exists. Alcohol, like most other poisons, attacks the nervous system first."

Third. The assumption of a border line between disease and health is not only not mysterious, but something we as physicians have to do in almost every case. Few insanities come on with even approximate suddenness. In few cases can the exact day or week of beginning be ever ascertained. What matters it if the day of beginning of locomotor ataxia is never known? That imaginary boundary line between health and disease was passed *somewhere*, and

it is true and just to assume some time of beginning arbitrarily.

Our conclusions, then, would be something as follows:

1. We should, for the sake of clearness, not mingle or use interchangeably the words inebriety and irresponsibility; but in the cases in which it can clearly be shown to exist, we should make inebriety mean the drinking, and irresponsibility the insanity so produced.

2. Disease should not be carelessly used to mean predisposition, or neurosis; nor should it be used to mean a disease-symptom unless so specified. But when unqualified it should designate a fairly well defined entity composed of a group of symptoms with known or presumed pathology and causation.

3. Inebriety (excessive drinking) can then be stated to be not a disease, but as tending to produce various diseased conditions.

These diseased conditions are quite general in character, but most notably seen in nerve-failure and brain-failure.

4. The predisposition varies in different persons and constitutes a temptation.

5. Irresponsibility is of varying grade, and the law does not necessarily follow these grades, but adjudges penalty—first by the consequences of the act, and secondly for the safety of society.

6. In our opinion none of the early degrees of inebriety as a rule produces sufficient effect to be named disease or irresponsibility. This being true, even if there be a growing mental impairment, we would call the mental state insanity only when it would be so called if induced by other causative conditions.

Insanity as a disease is also subject to this same rule. The name is not applied to all mental changes, but only to those which have a considerable definition. Multitudes of mental impairments are not called insanity at all.

CLINICAL MEMORANDUM.

INTESTINAL ANASTOMOSIS.[1]

By W. T. DODGE, M.D.,
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Physician and Surgeon to Mercy Hospital.

The following case was under the joint care of Dr. J. L. Burkhart and myself:

Gunshot wound of left wrist and abdomen; fecal fistulæ of ileum and colon, both closed by intestinal anastomosis with Murphy buttons; recovery.—E. McM., aged nineteen, was admitted to the Mercy Hospital, October 20th, 1893. The previous day, while hunting, he had climbed on top of a stump, and the gun slipping from his hand had been discharged, the contents passing through the anterior portion of the left wrist and entering the abdominal wall just above the crest of the ileum. Nothing had been done for him, and as he was very weak from the loss of blood and the fatigue of a long journey, we made no attempt to dress the wounds that night, but administered stimulants freely and secured rest with morphin. The following morning, his condition being much improved, an anesthetic was administered and the wounds thoroughly cleaned. The tissues of the wrist and abdomen were badly burned by the powder, and the entire charge of the gun was found in the abdominal wall, the greater portion of it resting against the peritoneum. The shot removed were of all sizes, from fine birdshot to buckshot, and altogether a good sized handful of wadding and shot was obtained. No evidence could be obtained that the peritoneum had been perforated, but the membrane was bruised and blackened by the contact of the foreign bodies. We satisfied ourselves with thoroughly cleaning the wounds, clipping off bruised tissues and establishing drainage. The young man experienced much pain in the abdomen for several days, when it was relieved by a discharge of fecal matter from the wound. At first only a portion of the feces came from the wound, a natural movement of the bowels taking place occasionally, but as the quantity escaping from the wound gradually increased and he was constantly soiled by the discharges we concluded to attempt closure of the fistula. The first attempt was made October 28th, but was a failure on account of the friable condition of the intestines. There were two fistulæ, one in the sigmoid flexure of the colon and one in the ileum. The gut-walls were covered by granulations, and suturing was impossible. We discovered an intraperitoneal abscess, however, evacuated the pus, and established drainage. Two weeks later, the suppuration having ceased, another attempt was made to close the fistulæ. We sewed up the intestinal openings without liberating the adhesions, being desirous to avoid additional contamination of the peritoneum. In two days the sutures sloughed out and the condition was worse than before. Two weeks later, or about December 1st, a third attempt was made to close the opening in the small intestine by suture, leaving the opening into the colon as an artificial anus. The walls of the intestine were found to be in a softened condition and to tear when an attempt was made to introduce sutures or to separate adhesions, and, the patient being in a feeble condition, the attempt was, for the time, abandoned. Our efforts were now limited to general supporting treatment and to maintaining cleanliness, an exceedingly difficult matter on account of the constant discharge of liquid feces from the small intestine. The man was, in spite of the free use of protective powder, constantly excoriated from the contact of this irritating discharge. A month of this sort of thing brought us to the determination to close the opening in the small intestine or close the patient's earthly career, and on January 2, 1894, with the assistance of Dr. Griswold, we undertook the final operation on the small intestine. The tissues were found to be in better condition than they had been a month previously, and the adhesions binding the small intestine to the abdominal opening were easily separated. The hole in the intestine was found to be so large and the portion of the bowel around it was so friable that we concluded to cut out the

[1] Read before the Michigan State Medical Society, March 3, 1894.

portion of gut containing the opening and make an end-to-end anastomosis. This was accordingly done by means of the Murphy button, the largest size of the regular set being used. The procedure occupied a quarter of an hour. The peritoneum was irrigated and the bowel returned to the abdominal cavity. The colon was stitched into the abdominal wound to close the opening and establish an artificial anus. The patient had no bad sysmptoms after the operation, gained rapidly in strength, and on the eighth day the button escaped from the artificial anus. By February 1st, the patient having become strong and able to walk about the ward, we determined to attempt to close the artificial anus in the same manner that had proved so successful with the small intestine. Truax, Greene & Co., of Chicago, made for us, after specifications furnished by Dr. Murphy, a special size button with a diameter of one and half inches and a central opening of seven-eighths of an inch. February 16th, assisted by Drs. Griswold and Dockry, we separated the adhesions binding the colon to the abdominal wall, and liberated intra-peritoneal adhesions for several inches on either side of the fistula. Four inches of the gut were then removed and the ends joined together by means of the large button. The patient delayed us a great deal by persistent vomiting, but the operation was completed within an hour. As the small intestine appeared in the wound we examined it carefully and located the site of the former anastomosis by means of a band of adhesion. No difference whatever could be discovered in the appearance of the intestine at that point. The caliber was the same as it was at contiguous points, and it was only by the presence of the band of adhesion that the anastomosis site was located at all. The abdominal wound was drawn together as much as possible and a drainage-tube introduced. The patient was kept on a liquid diet and laxatives administered daily. The only complaint he made was on account of the liquid diet, as he had a strong desire for more substantial food, and on the morning of the 7th day I had the pleasure of extracting the button from the anus. A few days later, by means of a flap-splitting operation, we closed the abdominal wound completely. Healing occurred rapidly, and on March 26th the patient was discharged.

MEDICAL PROGRESS.

A New Method for Reduction of Fractures of the Lower End of the Radius.—At a recent meeting of the Philadelphia County Medical Society, DR. T. S. K. MORTON described a method of reducing fractures of the lower end of the radius that he has found satisfactory during a number of years.

The surgeon stands in front of the patient, and interlaces his fingers beneath the supinated wrist and palm of the injured member, so that his two index fingers lie parallel, crosswise, beneath the lower end of the upper fragment of the radius. The palms of the surgeon's hands are then closed in upon the thenar and hypothenar portions of the patient's hand respectively, while the surgeon's thumbs rest parallel, lengthwise, upon the upwardly displaced lower fragment of the radius. The parts are thus firmly grasped by the surgeon while the following movements are made: The patient's wrist is excessively extended by carrying his hand upward. When hyper-extension has thus been secured the surgeon makes powerful traction upon the wrist in the line of hyper-extension. While this traction is maintained the hand is suddenly carried into full flexion, and at the same time powerful downward pressure upon the upwardly displaced lower fragment of the radius is made by the surgeon's thumbs, opposed by the interlaced index fingers beneath the lower end of the upper fragment.

The excessive extension of the first portion of the movement loosens or disentangles the displaced lower fragment, while the subsequent traction, flexion, and direct thumb-pressure force the lower fragment into proper position. A separated epiphysis of the lower end of the radius is likewise easily reducible by this manipulation. For comminuted or complicated or very oblique fractures extension and molding alone are called for in most instances.

Anesthesia is unnecessary for making a single effort at reduction by the proposed method. The patient does not anticipate what is coming, the two movements are made with lightning-like rapidity in a small fraction of a second, and in nearly every case perfect reduction has been accomplished before the patient realizes that he has been hurt. Should the manipulation fail to secure perfect reduction at the first attempt, anesthesia had better be induced, for the pain of repeating the maneuver would be intolerable.

In cases older than one week, with displacement persisting, anesthesia is induced before any effort at reduction is made. The manipulation will often be found to be the best means of performing both refracture and reduction.

For making a diagnosis a modification of this method is most useful. If the surgeon will take the hand and wrist in which fracture is suspected into his hands, as described, and, while the thumbs press firmly upon the lower end of the radius or first row of the carpus, make a series of gentle, quick, short flexions and extensions of the joint—rocking it through an arc of perhaps 25° or 30° above and below the forearm as a horizontal plane—he will be astonished at the ease with which crepitus of the bones of the joint and of any small or large bony or cartilaginous fragment will be elicited. And, best of all, the diagnosis of these obscure fractures about the wrist can thus, after some practice, be brought out without giving unbearable pain to the patient.

Vaginal Hysterectomy in a Woman Sixty-six Years Old.—LAWRIE (*British Gynecological Journal*, February, 1894, p. 385) has reported the case of a woman, sixty-six years old, who for about a year had suffered with pain in the region of the uterus and a vaginal discharge. The latter had at first been muco-purulent, but had subsequently become bloody. The menopause had occurred at the age of fifty. The uterine cervix presented a catarrhal condition. A sound entered the cavity of the uterus for the normal distance; its introduction was followed by slight hemorrhage. On bimanual examination the uterus was found to be somewhat tender but quite movable. Upon dilatation of the cervix an indurated, nodular mass was found occupying the upper part of the uterine cavity. By means of a curet this was

thoroughly scraped away, and the surface left fairly smooth. This operation was followed by great relief, the discharge disappearing and the pain ceasing. The patient gained in health and strength, but in three months the symptoms had returned with their previous intensity. The uterus was again dilated, and the growth, which had attained greater size than before, was a second time thoroughly curetted. There was again temporary improvement, but at the end of six weeks the old symptoms began to return. The growth had returned, and it was determined to make the removal as thorough as possible. With a strong curet the growth and underlying tissues were completely scooped out, till almost the whole thickness of the uterus at that part had been removed. Severe constitutional symptoms followed, but the result was satisfactory for four or five months. The pain then recurred in a severe form, and was attended with considerable hemorrhage. It was now determined to remove the uterus through the vagina. As the woman had never borne children the operation was attended with no little difficulty. The removal was, however, finally accomplished, and the after-history was entirely uneventful. Upon histologic examination the new-growth, which was a sessile tumor of the posterior wall of the uterus, proved to be an epithelioma.

The Amount of Nitrogen contained in the Red Blood-corpuscles in Health and Disease.—Von Jaksch (*Zeitschrift f. klin. Medicin*, B. xxiv, H. 5, 6, p. 430) has determined that the amount of nitrogen contained in 100 grams of moist red blood-corpuscles in health equals 5.2 grams, corresponding to 34.5 grams of albumin; during and following acute diseases the average rises to 5.80 grams of nitrogen, corresponding to 36.81 grams of albumin; in the course of chronic diseases that do not lead to anemia almost the same figures prevail as during health: 5.56 grams of nitrogen and 34.75 grams of albumin. All secondary anemias, as well as leukemia, lead to a diminution, a *hypalbuminæmia rubra*. The same relation is found to exist in chlorosis, though in a more marked degree. Pernicious anemia, on the other hand, in its last stages leads to a distinct increase in the amount of nitrogen present in the red blood-corpuscles, 100 grams containing 6.48 grams of nitrogen, corresponding to 40.5 grams of albumin—*hyperalbuminæmia rubra*.

THERAPEUTIC NOTES.

Recovery from a Large Dose of Tartar Emetic.—Perry (*Birmingham Medical Review*, vol. xxxv, No. 189, p. 291) has reported the case of a man, twenty-seven years old, who mixed for himself what he believed to be an effervescent draught. Being thirsty, he drank the mixture before he noticed that it had a peculiar taste and did not effervesce. He then discovered that, instead of sodium bicarbonate, he had taken tartar emetic. He passed his finger down his throat, and succeeded in inducing vomiting fifteen minutes after he had swallowed the poison, keeping up the vomiting with draughts of warm water. In half an hour purging began, and some time later the man was found in a semi-conscious condition in the water-closet. His skin was bathed in cold perspiration; he was almost pulseless, and could not be made to answer questions. He was at once carried to bed, and hot bottles and blankets were applied. Strong tea and brandy were given, followed by decoction of oak bark in considerable quantity. The man soon rallied and became able to answer questions. He vomited three times after having been put to bed, and from the bowels there was continually passing thick mucus having the appearance of boiled sago. There was much complaint of thirst. The purging continued for twelve hours, but neither in the stools nor in the vomit was there any blood. There were cramps in the legs and feet, subsequently becoming general, and being most distressing in the situation of the diaphragm and in the muscles of the neck. For a time the man was almost unconscious and nearly pulseless, with the extremities and the surface of the body cold, and he was apparently dying. The administration of stimulants, however, produced a good effect, and improvement now gradually set in. On the day after the accident the man passed half a pint of coffee-colored urine, being the first since preceding day. After this the urine and stools became normal. For three days there was complaint of general stiffness, especially across the abdomen, with an undue readiness of fatigue, but without further inconvenience. It is estimated that the amount of tartar emetic taken was not less than 200 grains.

Quinin Locally in the Treatment of Blennorrhagic Ophthalmia.—Having by an inadvertence used a solution of quinin by injection in the treatment of a case of gonorrheal urethritis, and obtaining good results, Reich-Hollender (*Archives of Ophthalmology*, vol. xxiii, Nos. 1, 2, p. 30) was led in the treatment of a troublesome case of gonorrheal ophthalmia to use the same agent, in conjunction with ice-compresses and applications of solutions of argentic nitrate, and with equally good results. Further investigation showed that the gonococcus of Neisser was destroyed by solutions of quinin. It is recommended that quinin be dissolved by hydrochloric acid, and in the following proportions:

Quininæ sulphatis	2.
Acid. hydrochloric. dilut. . . .	0.75
Aquæ destillat.	180. —M.

Ft. solutio.

S.—Shake well, and use as an eye-lotion every hour.

Frictions of the Feet as a Resuscitating Measure.—Urbaschek (*Hygeia*, 1893; *Memorabilien*, xxxviii, 3, 172) has reported the case of a small, corpulent man of advanced years, with fatty heart, who suddenly lost consciousness following some excitement, collapse virtually ensuing. Other measures of resuscitation failing, and the condition becoming alarming, the lower extremities were thoroughly rubbed with cloths wrung out of fresh water. Feeble respiratory efforts soon returned, and these were followed by deep respiration, together with the resumption of consciousness, and the condition of weakness was overcome by means of a general cold rubbing.

For Urticaria.—

R.—Liquor calcis.	
Aquæ laurocerasi	āā f℥j.—M.
Glycerini	

S.—Apply topically and cover with cotton-wool.

Med. Press and Circular.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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SATURDAY, JUNE 23, 1894.

THE TEACHING OF CHEMISTRY IN MEDICAL COLLEGES.

The Medical News has been severely taken to task for its position in regard to the teaching of chemistry in American medical colleges; nevertheless, the subject is one too important to permit us to be silent until the reform we seek to bring about is an accomplished fact. Let one who doubts the truth of our strictures ask thoughtful clinicians among the younger generation of leaders—we say younger generation in order to confine observation to a period recent enough to be properly the subject of comment—wherein they feel most keenly the deficiencies of their training. We venture to assert that seven out of ten will answer, "in advanced chemistry." They will confess, if they are honest, that they are not only unable to participate in, but are sometimes hardly able to follow, recent studies in pathology and therapeutics; that the whole subject of infection and immunity is for them beset with unnecessary difficulties, simply because they have not been properly grounded in organic chemistry.

Nor are the majority of recent graduates—even yesterday's graduates—much better off. The kindergarten chemistry-lectures, supposed in many medical colleges to be all-sufficient for graduating classes, are not up to the standard that should be exacted for admission to the first year's course; and even in some of the otherwise first-class colleges the time devoted to physiologic chemistry and pathologic chemistry is ridiculously inadequate.

The truth is that old superstitions as to what constitutes a liberal education have hampered even scientific institutions. The knowledge of books and of men who have written books is a liberalizing knowledge, but the knowledge that is required by a physician is not so much of letters as of things. Physics and chemistry, general biology, and even considerable geology are absolutely necessary before the science of medicine can be approached. The art of medicine can be learned in a fashion without these—and also without languages. Hitherto our medical schools have been—not unjustifiably—exalting the art of medicine, and hence the faulty organization of many of them. But the day of higher education and of exact research has dawned—and the schools that desire to keep high rank in the new day cannot stop with half-way measures. Physics and inorganic chemistry must be made preliminary requisites. General organic chemistry must be taught thoroughly during the first two years, in the laboratory, by a sufficient number of competent teachers, and for hours at a time, not for occasional minutes. The junior class must devote a sufficient time to physiologic chemistry, and the senior class study pathologic chemistry and be trained in methods of original research. Post-graduate courses must be organized for those who desire to continue these studies. The immediate future of medical science demands accurate and extensive chemic knowledge, and if American schools do not give it, American physicians will be left far in the rear. It is true that all cannot be done in a day, but a beginning can be made at once. The first practical step is to abandon the elementary lectures now given to first-year and second-year classes in medical colleges, and insist on a knowledge of general chemistry as a preliminary qualification. The rest will follow.

SWEAT-SHOPS AND DISEASE.

A recent investigation made in this city developed the fact that in some of the worst "sweat-shops" garments were being made for many well-known establishments. These garments were often of the best quality, and not, as is usually supposed, only cheap goods. A sweat-shop is synonymous with all that is filthy and unsanitary. In it the workmen are crowded together, and no factory-laws

regulate the manner of work. It often is also the living-room and sleeping-room of the family. The children, healthy or unhealthy, commingle with the workers and come in close contact with the materials. Diphtheria and other contagious diseases are very prevalent in the "sweaters' section." Often the Board of Health is informed only when a death occurs.

A quarantine means much to these poor people, and they have rather profanely nicknamed our sanitary agents the "Board of Hell." My lady's silk-waist or my gentleman's dress-coat may form a pillow for some sick child (not altogether a bad use for it), and herein lies the risk, particularly to the children in the families of those who receive articles of apparel made under the conditions stated.

If a proper popular sentiment were created, our wealthy merchants would be compelled to have their own shops, in which their goods would be manufactured under proper conditions. As it is, they are not bothered by factory-inspectors or by strikers, and are not obliged to go to the expense of rent, equipment, etc., but a contractor or middleman calls for the work and distributes it among his sweaters and guarantees the return of the manufactured article. It is simply a matter of convenience, and for the merchants' convenience his patron must run the risk of contracting disease.

The workmen are compelled to live under most unsanitary conditions, and in the end entail an expense on the city in the increased amount of disease. Besides, child-labor is called into use, which under existing factory-laws could be prevented, but which cannot be reached in sweat-shops. The subject is in every aspect a most important one, and well deserves the attention of sanitarians as well as sociologists.

The sweating system is spreading. At first it was in the hands of the Russians; now the Italians are taking it up, and whole blocks are given over to it. We trust that the medical profession will take some united action in the matter and so arouse public opinion that, for their own advantage, our prominent merchants will condemn "sweat-shop work" and do their own manufacturing.

EDITORIAL COMMENTS.

The American Pharmaceutical Association has issued a circular detailing the aim of the Association as the union of the educated and reputable pharmacists and druggists of America in the following objects:

1. To improve and regulate the drug-market by preventing the importation of inferior, adulterated, or deteriorated drugs, and by detecting and exposing home-adulteration.

2. To encourage proper relations between druggists, pharmacists, physicians, and the people at large, which shall promote the public welfare and tend to mutual strength and advantage.

3. To improve the science and art of pharmacy by diffusing scientific knowledge among apothecaries and druggists, fostering pharmaceutical literature, developing talent, stimulating discovery and invention, and encouraging home production and manufacture in the several departments of the drug-business.

4. To regulate the system of apprenticeship and employment, so as to prevent, as far as practicable, the evils flowing from deficient training in the responsible duties of preparing, dispensing, and selling medicines.

5. To suppress empiricism, and to restrict the dispensing and sale of medicines to regularly educated druggists and apothecaries.

6. To uphold standards of authority in the education, theory, and practice of pharmacy.

7. To create and maintain a standard of professional honesty equal to the amount of our professional knowledge, with a view to the highest good and greatest protection to the public.

To all of which we most heartily assent, but we would supplement these worthy endeavors with yet three propo-propositions, viz.:

8. *To suppress counter-prescribing.*

9. *To suppress the unauthorized renewal of prescriptions.*

10. *To discourage the sale of secret nostrums.*

The Summer Care of the Children of the Poor.—A most commendable and praiseworthy enterprise, which should especially receive the encouragement and support of the medical profession, has been undertaken by a number of public-spirited and philanthropic citizens of Philadelphia, with the end of furnishing to poor families, virtually or actually at cost, sterilized milk, pure milk, and infants' foods. As is but too well known, the summer diseases of children and the frightful resulting mortality are due to improper food and clothing, intense heat and unhygienic surroundings. The most important of these is without doubt the improper character of the food, and it is the object of the Philadelphia Sterilized Milk and Ice Society to eliminate as far as possible this prolific source of disease and death. For the present there will be but one depot, and that in a district in which a large number of poor people reside, but the establishment of others is contemplated if such funds can be raised. The Mayor of the city, Mr. Stuart, is the President of the Society, and Mr. Philip Lewin is the Treasurer. The Rev. J. Leonard Levy, who has been most active in the movement, is the First Vice-president and the City Treasurer, Mr. McCreary, is the Second Vice-president. A similar enterprise has been for some time in successful operation in New York.

Through the courtesy of the Board of Health, the Society will be furnished with disinfectants, to be distributed where they will do the most good.

The Prevention of Tuberculosis and the Prevention of Smallpox.—We have on several occasions pointed out the wisdom of establishing a hospital for the treatment of tuberculosis. The prophylactic utility of vaccination is too well known and too universally admitted to require comment here. The Pennsylvania State Board of Health, at a recent meeting, adopted the following timely resolutions:

Resolved, That it is the sense of the State Board of Health of Pennsylvania that the time has come when the State should provide hospital accommodations for persons suffering from pulmonary tuberculosis in the case of those who cannot be properly cared for in their own homes, and who through carelessness might be dangerous to the community at large. It is believed that the establishment of such hospitals might be of great value in educating the people.

Resolved, That it is the sense of the State Board of Health of Pennsylvania that all inmates of prisons, reformatories, almshouses, hospitals, schools and other public institutions be vaccinated immediately on admission.

This action is in the spirit of progressive and preventive medicine, and should be the precursor of legislation looking to the enforcement of the views so well expressed.

For Higher Medical Education.—The New York College of Dentistry has set a worthy example in higher education that such medical institutions as have not yet raised their standards of preliminary requirements and lengthened their course of study may well emulate. The college announces (1) a prospective, yearly advance in the preliminary educational entrance-requirements, the details of which are explicitly set forth; (2) a prospective, yearly lengthening of the lecture-sessions—that of 1894–95 to six months, that of 1895–96 to seven months, and that of 1896–97 to eight months; (3) the requirement of evidence prior to graduation of three years' actual study and practice of dental surgery, inclusive of attendance on three lecture-sessions in separate years; (4) the inauguration during the lecture-session of 1894–95 of graded courses of practical work in sub-classes, for the classes of the first, second, and third years, respectively. The further announcement is made that the purpose of the institution is to educate men to practise dental surgery as a special branch of medicine; therefore, the curriculum includes the fundamental departments of medicine, with dental surgery and oral prosthetics.

CORRESPONDENCE.

POTASSIUM PERMANGANATE AS AN ANTIDOTE TO MORPHIN.

To the Editor of THE MEDICAL NEWS,

SIR: In the *Journal of the American Medical Association* for May 19, 1894, p. 755, an editorial entitled "Permanganate of Potassium as an Antidote to Morphin" contains the following as its closing paragraph: "A new antidote to morphin was not urgently demanded, and it could not, in fact, be truthfully denominated as a 'long-felt want,' since the treatment already in general use is very efficient and, as a rule, successful. But even allowing some usefulness to potassium permanganate as an antidote, when swallowed immediately after morphin has been taken into the stomach, this will not warrant the assumption that in such cases its hypodermatic administration will have any beneficial effect. Certainly, we are not warranted at this stage of the investigation in abandoning our well-known physiologic antagonists in the treatment of poisoning, either by morphin or by opium or its preparations. When a human life is trembling in the balance and fatal coma is threatening, it would be criminal to lose time by experimenting with therapeutic novelties, to the exclusion of the established treatment, and the 'rejection of the accumulated experience of the profession.' Some might be led to do so, however, were no word of protest raised against the implication that the suggested treatment is a safe and efficient substitute for the approved methods already in use."

It is scarcely a debatable question if suffering humanity is ever poorer for the discovery of any new method for the amelioration of even the least of those innumerable ills to which flesh is heir, even if that method be only within the reach of a favored few, as compared with the multitude beyond the pale of its relief-bearing influence. And when a measure is proposed whose adoption under certain conditions (as has been undoubtedly shown) means the actual saving of human life which must surely have been sacrificed had "the treatment already in general use" for those conditions been persisted in, shall it be denied consideration at our hands, because, if it shall demonstrate its claims as a valuable antidote to opium narcosis, "it necessarily means the rejection of the accumulated experience of the profession?" Does it not seem incredible that, in the face of undoubted instances of the great value of potassium permanganate in cases of extreme opium-narcosis, any should be found willing to oppose it on such puerile grounds, or be desirous of prejudicing the minds of the profession at large against it by an argument whose mere statement is at once a confession of weakness that must deprive it of any significance?

The editorial writer in the *Journal* hardly treats his subject in that dispassionate style so clearly demanded of one that occupies so exalted a position. The opening paragraphs of the article incline one to the belief that he will find in them a calm, unprejudiced treatment of this new method of meeting the toxic conditions of morphinism, and he invites one, very courteously, to a "study of the chemic and physiologic considerations upon which its employment is based." Further perusal finds the subject of the employment of the potassium salt treated of in all its aspects, and when its use under the conditions of morphin-poisoning or opium-poisoning is taken up, the ultra-conservatism of the writer reveals itself but too clearly. It may be understood that the permanganate can act as a "chemic antidote, and renders inert the poison yet unabsorbed, with which it must be brought in contact. There is absolutely nothing to warrant the view that this agent can act as a systemic or physiologic antidote to morphin or any other toxic agent. . . . From what is known of the chemic nature and physiologic effect of permanganate of potassium, we must admit that the successful use of this agent administered hypodermatically in cases of lauda-

num-poisoning, is something we were not prepared for. . . . It is possible that when hypodermatically administered, although decomposed in the tissues, the nerve-centers may be influenced by some of its products; but even if so, it would not be the permanganate *per se*, but something else which does the work. . . . In the meantime, the distinction between a chemic and a physiologic antidote must be kept in view and, above all things, we should not require of a chemic antidote that it shall also be a physiologic one." Then follows that paragraph which forms the text for these remarks, and at its close we are left in wonderment as to what danger threatens our medical life, or how our professional standing will be compromised should we be led to employ this remedy in the management of some desperate case of opium-narcosis, when the established treatment has failed, as I have twice known it to fail, after most faithful and prolonged trial. Why, under such trying circumstances, "when a human life is trembling in the balance and fatal coma is threatening," must it be kept in view that a chemic antidote and a physiologic one are two distinct things, and even although the established treatment has failed thus far to bring relief, why should it be adjudged "criminal," this so-called experimentation with a therapeutic novelty, when its employment only implies "the rejection of the accumulated experience of the profession"—at the risk of saving a human life?

A few days ago I was hurriedly summoned to a patient exhibiting all the symptoms of profound morphin-poisoning. One hour previously I had administered a hypodermatic injection of morphin and atropin for the purpose of overcoming a condition of acute maniacal excitement that had persisted almost continuously for forty-eight hours, and which other means had entirely failed to relieve. The family had been apprised of the risk of so doing, for not only was I ignorant of any possibly existing idiosyncrasy of the patient,[1] but her exhausted state of system, as the result of a prolonged illness, in the closing stages of which I had been summoned, led me to fear a possible overwhelming effect of the morphin, which, in a less debilitated subject, need not have been anticipated from the amount of the drug employed. The nurse had been cautioned to watch closely the respirations, and not to lose any time in summoning aid should they fall to ten per minute. When I reached the patient I found her in profound stupor, with a livid aspect of countenance, and the coldness of extremities and of body-surface characteristic of the asphyxiated condition. The pulse was feeble, rapid, and irregular, and the few efforts at respiration, which were *three per minute*, were but faint gasps, in the intervals between which the woman lay without semblance of life, the faint, thready pulse being the only indication of the slight hold she maintained upon it. I at once entered with energy upon "the established treatment," which, "as a rule, is successful." Hypodermatic injections of atropin sulphate were given at frequent intervals, as much as gr. $\frac{1}{48}$ being administered when it was found that smaller doses were useless. An hour passed, and the outlook was a hopeless one. For fully half a minute there would be no effort at breathing at all, and artificial respiration alone maintained life for a time. It then occurred to me to try the potassium salt, and, ignorant of the necessity requiring one not to expect a chemic antidote to act as a physiologic one, I injected ten drops of a *saturated* solution of potassium permanganate into the forearm. Tweny minutes of anxious waiting passed, and twelve drops more were thrown into the tissues, and then for the first time there came an improvement in the depth and number of respirations. A third injection of fifteen drops was given twenty minutes later, as the improvement was not maintained. This proved entirely satisfactory, as the woman returned to consciousness, and voluntary efforts served to maintain respiratory effort on a safe basis. I did not leave her, however, for another hour, as she manifested a disposition to drowsiness, and I preferred taking no chances. No further treatment was employed, however, other than the administration of strong coffee and moral suasion, and when I left her it was with such feelings of gratitude to the potassium salt as could only find real expression in combating the very erroneous views of its efficacy advanced by the editorial in question.

In the face of such testimony as this regarding the value of "the new treatment," will any be found unwilling to make trial of potassium permanganate in a desperate case of opium-poisoning because he may, by so doing, be acting against the teachings of the profession, and disregard the theories concerning the action of this salt when taken into the human economy? Of what concern is it to us, or our patients dying from opium-poisoning, whether, when hypodermatically administered and decomposed in the tissues, it be "the permanganate *per se*" or "something else" which does the work? If only favorable results attend the use of the potassium salt when employed, even in most desperate cases of opium-poisoning, due either to ingestion of the poison into the stomach, or to its administration through hypodermatic means, why should it be asserted by any that "a new antidote to morphin was not urgently demanded," particularly, when the numerous failures that have attended "the treatment already in general use" are borne in mind? If Dr. Moor's experiments prove the entire reliability of the permanganate when "given immediately after the poison is swallowed;" and if the use of the salt hypodermatically has been the means of saving life in every instance but one in which it has thus been employed (and that one a necessarily hopeless case under any treatment, *vide* MEDICAL NEWS, vol. lxiv, No. 19, p. 514), why should not every reason exist for its employment at the very outset of the treatment of cases of opium-narcosis, if not as a special treatment of that condition, then as an adjunct, and a most valuable one, to the atropin and strychnin method, rather than

[1] I learned subsequently from the husband, who was absent from home at the time, that his wife had never been able to take morphin, as it always produced decidedly unpleasant effects. This statement was confirmed by the unusual result in the present instance, as for an hour after the injection had been given the woman slept quietly and the respirations were easy and natural. The change came suddenly and without warning, the breathing becoming labored and the number of respirations falling to six per minute, while the face became livid, and stupor appeared, and within fifteen minutes, when I had reached her bedside, her condition had become as described,

as a *dernier ressort*, and after the more usual methods have failed? And may we not justly question the position taken by the editorial writer in the *Journal* wherein he refuses to acknowledge "that the suggested treatment is a safe and efficient substitute for the approved methods already in use?" Yours very truly,

JAMES STRATTON CARPENTER.

POTTSVILLE, PENNA.

PERNICIOUS ANEMIA FOLLOWING PREGNANCY.

To the Editor of THE MEDICAL NEWS,

SIR: Mrs. M., pregnant for the third time, was troubled with obstinate nausea and vomiting during the last two months of her gravidity, instead of the first two, as had been the case before. Her health, however, seemed excellent and her strength quite good, despite this trouble. On May 2, 1894, she was delivered, the labor being entirely normal in every respect and scarcely the ordinary amount of blood being lost. Her gastric disturbance now subsided. On the day of the confinement the temperature was 100° in the morning and 101° in the evening; it remained elevated for about two weeks, after which it rose about one degree. Not till the tenth or eleventh day after confinement, however, was anything serious suspected. At this time the woman tried to sit up, but almost fainted from her great weakness. She had no pain, distress, or tenderness at any time. She complained only of weakness. She was quite pale and grew more so till the skin assumed a typically cachectic appearance as in carcinoma of the stomach, and her breath was very offensive as in that disease. Emaciation was not marked. In spite of heroic treatment with iron, arsenic, and other tonics, with nutritive enemata, the woman slowly and gradually failed and died June 2, 1894. At the post-mortem examination, made by Dr. Chamberlain, it was seen that the body was not at all emaciated, but the anemia was so extreme that the instruments and hands when washed did not even tinge the water. There was no blood in any of the vessels except the aorta. Not the slightest evidence of disease, acute or chronic, was found in any of the internal organs. The article on "Fatal Nausea and Vomiting of Pregnancy," in THE MEDICAL NEWS of June 2, 1894, has prompted me to report this case.

Yours truly, J. A. BROBERG.

DELAVAN, MINN.

THE TRANSMISSIBILITY OF TUBERCULOSIS.

To the Editor of THE MEDICAL NEWS,

SIR: In the discussion before the College of Physicians, of Philadelphia, upon the registration of tuberculosis, on January 12, 1894, I made the following statement: "Dr. Williams, of the Brompton Hospital, has been quoted as an opponent of the theory of contagion, but he has written a paper in which he shows that a large number of nurses of the Brompton Hospital have contracted tuberculosis. I think that he has traced some fifteen or twenty cases."[1] Dr. Williams has called my attention to the fact that I misquoted his article and a rereading shows that this is true. In my remarks, I spoke from memory and entirely extemporaneously. The fifteen or twenty cases which I credited to nurses occurred among persons who had been employed in one capacity or another about the hospital, and only one case occurred in a nurse during her term of service. The time covered by Dr. Williams' investigation is thirty-six years. Whilst I still believe that the conclusion drawn from Dr. Williams' paper (namely, that the experience of the Brompton Hospital cannot be used as an argument against the theory of the contagiousness of tuberculosis) is correct, I deeply regret having misquoted Dr. Williams and cheerfully make the correction. Dr. Williams contends that his paper "furnished only one case of consumption, contracted during residence, among the Brompton nurses, and that a doubtful one, in a period of thirty-six years." Respectfully,

LAWRENCE F. FLICK.

PHILADELPHIA, 736 PINE STREET.

[1] See THE MEDICAL NEWS, February 10, 1894, p. 165.

RECOVERY FROM TOXIC DOSES OF MORPHIN.

To the Editor of THE MEDICAL NEWS,

SIR: The comment on "Recovery from Toxic Doses of Opium and its Derivatives" leads me to report in brief a case never before published.

In September, 1889, Dr. Akins, of Loraine, Ill., and I were called to see a strong girl who had taken fifteen grains of morphin sulphate four hours before, with suicidal intent. So long a time having elapsed after the ingestion of the poison, we did not try to empty the stomach. We gave hypodermatic injections of atropin sulphate till the pupils were dilated, and used inhalations of amyl nitrite as a stimulant. The girl regained consciousness in about fourteen hours, was delivered of premature twins soon after, and made a good recovery.

Respectfully, D. D. STEINER.

QUINCY, ILL.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

Forty-fifth Annual Meeting, held at San Francisco, Cal., June 5, 6, 7, and 8, 1894.

(Specially reported for THE MEDICAL NEWS.)

GENERAL SESSION.

THIRD DAY—JUNE 7TH.

THE apparently perennial contest over the revision of the Constitution and Code of Ethics of the American Medical Association was renewed at this session. For a time the battle between the majority and the minority factions waged fiercely, but at its close the situation remained exactly as it was before the struggle began several years ago.

Odd Fellows' Hall was well filled when PRESIDENT HIBBERD called the meeting to order. After the usual announcement of plans to promote the pleasure of delegates, prepared by DR. PLUMMER, the majority report of the Committee on Revision was presented by DR. HOLTON. It was essentially the same as the new Constitution proposed at Milwaukee two years ago. The revised Constitution and Code would open the doors to all members of the profession in good standing and remove the barriers now existing.

The minority report was offered by DR. DIDAMA, of

New York. DR. FERGUSON, of New York, moved the substitution of the minority report for that presented by the majority of the committee.

DR. QUIMBY, of New Jersey, made a vigorous speech in favor of the minority report. Applause and hisses, equally mingled, greeted his remarks.

By a vote of 161 to 70 the minority report was made the report of the committee, and the conservative element was in its glory.

DR. WALKER, of Virginia, then moved the adoption of the report as a whole.

The roll was called and 215 delegates responded to their names. The Chair stated that a three-fourths vote was necessary to change the Constitution. The vote was announced as 151 ayes to 64 noes, and the motion was declared lost. The old Constitution and Code, without amendment of any kind, therefore, remains in force.

After the adoption of a resolution designed to promote the interests of the *Journal*, the session was adjourned.

FOURTH DAY—JUNE 8TH.

The meeting was called to order by PRESIDENT HIBBERD. After the usual announcements by the Chairman of the Committee of Arrangements, the question of the amendments to the Constitution was taken up. After a lively contest the consideration of the matter was indefinitely postponed. DR. HOLTON presented a majority report on the Revision of the Code of Ethics. DR. DIDAMA followed with the minority report.

A motion by DR. INGALLS to lay the whole matter on the table was carried. Later in the session DR. MARCY, of Boston, moved that all matter relating to the Constitution and Code which had been laid on the table be again taken up for consideration. Carried.

He then moved to indefinitely postpone the revision of the Constitution. Carried.

A motion that a statement making clear the provisions of the Code be published in the *Journal of the American Medical Association*, explanatory of the exact position of the revision contemplated, was adopted.

DR. WINGATE, Chairman of the Committee on the Establishment of a Department of Public Health at Washington, urged the advisability of endeavoring to put an officer in the Cabinet. In case this could not be accomplished a national sanitary officer should be appointed.

DR. COCHRAN, of Alabama, suggested there should be a conference held at Washington annually for the consideration of questions of public health. Both suggestions were adopted.

The report of the Business Committee, recommending that members be allowed to go three years without paying dues before they are dropped from the roll, was adopted.

A resolution apropos of the death of DR. J. H. RAUCH, of Illinois, was presented and unanimously adopted.

A letter from the Minnesota State Medical Society, extending to the members of the American Medical Association an invitation to visit the St. Paul Medical Convention on their way East, was read by SECRETARY ATKINSON.

The following preamble and resolution were offered:

Whereas, The interests of the *Journal of the American Medical Association* require that it should command the confidence of the members of the Association in affiliation with the Association; and,

Whereas, The *Journal of the American Medical Association* has continued to publish unethical advertisements like those of Antikamnia, Labordine, and other secret nostrums, and that of the American Physicians Sanitarium Company offering $100 worth of stock to physicians sending it patients; and,

Whereas, The Trustees of the *Journal* have defended such a course on the ground that the money from such advertisements was needed to publish such a journal as they thought creditable to the Association;

Resolved, That the various State Medical Societies in affiliation with this Association are hereby requested to inform this Association whether their members approve the policy of admitting such advertisements to the pages of the *Journal of the American Medical Association*.

A motion to lay the resolution on the table was lost.

On motion, it was referred to the Judicial Council.

A vote of thanks to the medical profession of California for courtesies extended to the American Medical Association was adopted unanimously.

The addresses on "General Surgery," by DR. ERNEST LAPLACE, of Pennsylvania, and on "State Medicine," by DR. GEORGE H. ROHÉ, of Maryland, were read by title, owing to the absence of their authors.

The newly-elected President, Donald McLean, was escorted to the platform. He delivered a short address replete with expressions of the kindest feeling toward the members of the Association, and full of appreciation for the honor and courtesies bestowed upon him.

After a few words of thanks to the Association for the consideration shown him during the past year, Dr. Hibberd closed the session.

SECTION ON PRACTICE OF MEDICINE.

SECOND DAY—JUNE 6TH.

DR. C. M. RICHTER, of San Francisco, read a paper entitled "The Influence of Atmospheric Pressure upon the Prevalence of Pneumonia." He contended that pneumonia does not evince a bacillary origin, and that even in well-marked cases the specific germ is rarely found. There are several forms of pneumonia. Epidemics generally affect children under five and adults over fifty years of age in greater proportion. The liability to pneumonia begins with zero at the poles and gradually increases to a point in the temperate zone, then again diminishing toward the equator. Winter and early spring show the greatest proportion of cases; summer and early autumn the least. This may be explained by the greater maximum atmospheric pressure during the months when pneumonia is prevalent, *i. e.*, the more continuous the maximum high atmospheric pressure the greater the occurrence and mortality of pneumonia. Statistics were given covering a number of years and including the large cities of Europe, America, and Australia, in support of the position taken. A more extensive and thorough line of research was urged, with a view of learning the effect of continuous or extreme high atmospheric pressure upon the organism.

DR. A. W. PERRY, of San Francisco, expressed doubts as to high pressure acting as a causal agent in pneumonia. He pointed out that pneumonia is common in the mountain towns of California. Information gained

from practitioners in these towns does not indicate that the disease is more prevalent or more fatal because of the high barometric pressure. The question was asked if it was meant that pneumonia was caused by high or low barometric pressure, by the oscillations, or by outbursts of pressure.

Dr. Kellogg, of Milwaukee, asked if the statistics given were made from deaths or from all reported cases.

Dr. Richter in closing said that according to his statistics pneumonia was not more prevalent in the mountainous districts than in the valley towns and cities. It is not the oscillations of pressure, but the maximum continued high pressure to which he referred. His statistics were prepared only from the deaths, as there is no means of learning the actual number of cases.

Dr. Washington Ayer, of San Francisco, read a paper entiitled "Fever and the Relations of Microörganisms to Disease." He assumed a negative position as to the germ-theory, stating that he considered some conservatism necessary in this day of bacteriology. He looked upon fever as an important factor in almost every disease. In its ordinary sense fever means an exalted temperature of the blood as a result of increased tissue-destruction. Mutation and nutrition are interrupted. He called attention to the fact that even the same type of fever shows great variations in different patients and even in the same individual. From this he concluded that if the germs were the *materies morbi* there would be more uniformity. Does convalescence show that the germs have ceased to proliferate or that they are subdued by therapeutic measures. Typhoid fever is generally milder in course on the Pacific slope than on the Eastern coast, and yet the *casus belli* is claimed as one and the same. In the opinion of Dr. Ayer one example, viz., intermittent fever, makes the germ-theory for fevers untenable. He concluded by urging more careful work in practical medicine and less in the dreamland of microscopy. At present investigation has only proved the existence of organisms.

Dr. W. F. McNutt, of San Francisco, read a paper entitled "Tubercular Peritonitis." He reported four cases in which he had performed celiotomy for *primary* tuberculous peritonitis. Ordinary abdominal drainage was employed, but no medication. In all, complete and permanent recovery took place. They were considered primary because no evidence of a tuberculous process in other organs was found. In all four cases the peritoneum was thickened, covered with myriads of miliary tubercles, and the abdominal cavity contained an exudation varying in character in the different cases. Microscopic examination of a piece of the peritoneum, the site of tubercles, showed the histologic elements to be those of tubercle, although no tubercle-bacilli could be detected. A point dwelt upon was the peculiar shape of the abdomen noted in cases of tuberculous peritonitis with effusion. It resembles that due to cystic disease and not that common in ordinary ascites. This peculiarity was attributed to the fact that the effusion occurs into the thickened peritoneal wall.

Dr. John F. Carpenter, of Pottsville, Pa., read a paper entitled "The Pathology of Tetany." He stated that from recent contributions tetany is now considered a nervous disease, although no distinctive post-mortem changes have been found to show the exact nature of the disease. A second cause of pathologic uncertainty lies in the fact that the disease occurs in various forms, viz.: (1) Rheumatic, acute, or epidemic tetany, which is generally fatal; (2) Chronic, due to chronic diarrhea, prolonged lactation, etc., from which recovery is usual; (3) Occurring in the course of dilatation of the stomach; (4) Surgical tetany, following removal of the thyroid gland especially, which is generally fatal. Tetany is also found to follow such diseases as induce a morbid discharge from mucous surfaces and such as are due to sepsis. This is especially true of the puerperium when complicated by septic infection. It was contended that sepsis is clearly traceable as the causal agent of tetany. In all of the conditions predisposing to its occurrence septic infection is clearly probable. Furthermore, sepsis and septic absorption will account for other grave nervous disorders by causing profound anemia, which is the proximate cause of nervous irritation. Habit also has some influence. Thus attacks of tetany may be kept up by a condition of unstable equilibrium set up by the original attack. Owing to antiseptic precautions tetany is but little known, and the belief was expressed that in the near future the disease would be wholly one of the past.

Third Day—June 7th.

Dr. John Eliot Woodbridge, of Youngstown, Ohio, read a paper on "Typhoid Fever." He expressed confidence that the disease could be aborted by the use of antiseptics, such as thymol, guaiacol, and eucalyptol.

Dr. A. W. Perry, of San Francisco, read a paper entitled "Diagnosis and Treatment of Diseases of the Stomach by the Stomach-tube." He stated that most disorders of the stomach depended upon fermentations or abnormal accumulations in quantity or quality in that organ. The fermentations were acetic, lactic, butyric, cellulose, etc. Lactic-acid fermentation develops normally within from fifteen to twenty minutes after digestion commences, but is held in check by the hydrochloric acid of the gastric juice. Acetic and butyric fermentations are prevented by a more rapid and complete emptying of the stomach. By means of the stomach-tube we can determine the existence or non-existence of dilatations as well as the chemic composition of the gastric contents.

Spasm of the glottis may interfere with the introduction of the tube. This may be overcome by touching the back of the pharynx with the finger. Cocain can also be used. In some cases the circular fibers of the esophagus contract, and thus obstruct the passage of the tube. The stomach-tube should be used only every second, third or fourth day. During the intervals the internal administration of an anti-fermentative was recommended. Resorcin, gr. v, after meals, does not interfere with the digestive processes. The use of the stomach-tube will prove valuable in the diagnosis of carcinoma and ulcer of the stomach by allowing a quantitative test for hydrochloric acid.

Lavage has been found of benefit in the treatment of acute and chronic gastric catarrh; dilatation of the stomach not dependent upon pyloric obstruction; various fermentations, causing reflexes; carcinoma; ulcer; and finally in obstinate singultus.

DR. FREEMAN, of Indiana, related that he had found that by the frequent use of the esophageal bougie, between the acts of lavage, the esophagus became tolerant of the presence of the tube.

DR. R. W. MURPHY, of San Francisco, read a paper entitled "The Law of Equivalence in Medical Science." He expressed the belief that before many years have passed prophylactic measures will be discovered for such diseases as nephritis, carcinoma, tuberculosis, etc., as has already been the case with smallpox, hydrophobia, etc. He called attention to the great diversity of treatment directed toward the same disease, and believed we should have more practical text-books on drug-actions, both as regards maximum and minimum dosage.

He predicted that the physician of the future would be the man who closely watches the dual action of his drugs. In the case of calomel, cited as an instance, we may find physicians recommending a dosage varying from gr. $\frac{1}{20}$ to gr. xl for the same disease, and under apparently the same conditions. The same may be said regarding almost all of the drugs in use. Among other remedial agents electricity is largely employed without any thought of the laws of equivalence.

The following papers were read by title:

"Champagne and Strychnin in Chest-troubles of the Aged," by DR. G. EDWARD BUXTON, of National City, Cal.; "The Treatment of Erysipelas," by DR. JAMES M. ANDERS, of Philadelphia, Pa.; "The Use of Turpentine in the Treatment of Diphtheria," by Dr. E. W. KELLOGG, of Milwaukee; "Lung-gymnastics in the Treatment of Chronic Disease," by Dr. L. P. WALBRIDGE, of Decatur, Ill.; "A Clinical Study of Scarlatina at High Altitudes," by DR. J. N. HALL and DR. WM. P. MUNN, of Denver.

Dr. E. W. Kellogg, of Millwaukee, was elected Chairman of the Section, and Dr. W. E. Quine, of Illinois, Secretary, for the ensuing year.

SECTION ON SURGERY.

SECOND DAY—JUNE 6TH.

DR. EMMET RIXFORD read a paper entitled "Early Symptoms and Diagnosis of Tubercular Joint-disease." He detailed briefly the symptoms that are to be depended upon in the early recognition of the disease and its differential diagnosis.

DR. L. H. SAYRE, of New York, read an interesting and instructive paper on the "Conservative Treatment of Tubercular Joints." He laid much stress on the manner of applying the plaster cast in the treatment of joint-disease.

DR. S. STILLMAN, of San Francisco, followed with a paper on the "Treatment of Tubercular Joints by the Injection of Iodoform." He dwelt on the technique of the operation and on the location of the tuberculous foci.

This was followed by a general discussion of the various methods employed.

DR. L. C. LANE, of San Francisco, read a paper on "Concussion of the Brain." After reviewing the history of the subject and giving a general *résumé* of the various theories brought forward in regard to the subject since 1840, he explained why in most cases the diagnosis is easy, whereas in other cases it is most difficult, especially when there is no history of a blow or a fall upon the head. He divided the cases into three general classes or grades: (1) the mild; (2) the severe; and (3) the fatal cases.

As symptoms, he enumerated vertigo, faintness, weakness, drowsiness, and coma. The prognosis depends on the extent of the injury. As after-effects in some cases were mentioned melancholia and mania.

A paper on the "Treatment of Fractures of the Lower End of the Humerus," by DR. O. H. ALLIS, of Philadelphia, who was absent, was then read by the Chairman. The main point brought out was the advantage to be derived from treating such injuries with the arm in extension and the patient in the recumbent posture. This facilitates the circulation of the blood, the examination of the part, and the renewal of the dressing. Passive motion was only to be used in the latter half of the treatment. A lengthy discussion followed, which was represented on the one side by DR. LANE, who favored the method employed by Dr. Allis; and on the other side by DR. SAYRE, who favored the rectangular position.

The subject of hernia was then taken up.

A paper entitled "The Treatment of Strangulated Hernia," by DR J. RANSOHOFF, of Cincinnati, Ohio, was listened to with marked attention. He emphasized the great importance of immediate operative interference in the case of strangulated hernia and the great danger to be apprehended from prolonged taxis, which has a tendency to decrease the vitality of the gut, as well as to make the subsequent operative procedures less favorable in their results.

DR. A. E. ROCKEY, of Portland, Oregon, then followed with an interesting paper on "Observations on the Radical Cure of Inguinal Hernia." He advocated the idea of operative interference also in many cases of long standing and in cases in which the hernia is very large.

DR. H. O. MARCY then read a paper on "The Radical Cure of Hernia." He advocated the use of kangaroo tendon in suturing in preference to catgut.

A lively discussion followed, which showed that there are still many adherents of the conservative method of treatment.

DR. SCHIEL read a paper entitled "A Plea for the Better Teaching of Anatomy." He said that among all medical studies anatomy probably ranked first in importance. The lack of interest shown by students in the study of anatomy was, he thought, largely due to the methods of teaching. He also laid great stress on the evil results consequent upon a deficient education in this branch of medical science. These, he said, were not only meted out to the physician but also to the patient, who, falling into the hands of a practitioner with only a superficial knowledge of anatomy, was like a lamb being led to slaughter, unconscious of the danger that awaits him.

THIRD DAY—JUNE 7TH.

DR. C. F. BUCKLEY, of San Francisco, read a short paper on "The Symptoms and Treatment of Tumors of the Bladder." He related three cases of tumors of the bladder undoubtedly produced by traumatism to the perineum. He indicated that in his opinion not enough attention was paid to injuries of this sort.

This paper was followed by a voluntary contribution on the subject of "Anti-fermentative Surgery," by DR. HOGAN, of Texas.

DR. C. F. BUCKLEY then exhibited two very interesting specimens. One was a slate-pencil removed from the bladder of a male subject by the median operation. The other specimen was a collection of gall-stones removed from the gall-bladder of a patient during life.

DR. DAVID POWELL, of Marysville, Cal., read an instructive paper on "The Pathology and Symptomatology of Hemorrhoids, Anal Fistule, and Anal Fissure." Clinically he divided piles into external and internal, although the pathology of both is the same. The veins involved are the inferior and superior hemorrhoidal plexuses. In the initial stage the condition is nothing more than one of dilatation of the rectal veins. Later, characteristic changes take place and the tumor enlarges. As causes he enumerated fecal accumulations, the gravid uterus, or some obstruction to the hepatic circulation. Internal hemorrhoids he classified into (1) venous, (2) arterio-venous, and (3) capillary. Anal fistule, it was pointed out, usually originates in an ulcer. It may also be caused by a thrombus or by tuberculous foci that undergo suppuration. This trouble is often not accompanied by any urgent symptoms.

Anal fissure was considered a most important subject practically, not because of its pathology, but rather because of the pain and annoyance that invariably accompany it. Among the characteristic symptoms are dull, aching pain, aggravated by evacuation of the bowels, morning diarrhea, loss of blood, continual irritation of the genito-urinary organs, and tender prostate. The constitutional disturbances are often marked. If the trouble remains unrelieved the patient becomes pale, anxious, and looks careworn.

DR. G. B. SOMERS, of San Francisco, read an interesting paper on "The Treatment of Anal Fistule." It was shown that the treatment is by no means always simple, on account of two complications: (1) cicatricial tissue was frequently found in the canal, and (2) collateral sinuses often existed, hindering the surgeon in his work. In most cases the fistula is preceded by an abscess, which may be either pyogenic or tuberculous in origin, and which imparts to the fistula its characteristic aspect.

The methods of treatment are mainly four: (1) by injection, (2) by ligation, (3) by Mathews' fistulatome, and (4) the radical operation with the knife. Dilatation of the sphincter should always precede the operation.

DR. THOMAS W. HUNTINGTON, of Sacramento, read a paper on "The Treatment of Anal Fissure." He stated that anal fissure, though more common between the ages of twenty and thirty-five, occurs at times during infantile life and in old age. It occurs as often in men as in women, a view not generally held up to this time.

The symptoms are morning diarrhea, tenesmus, intense paroxysmal paralyzing pain, quite out of proportion to the size of the ulcer.

There are two general methods of cure, (1) by dilatation of the sphincter, and (2) by incision. Incision should always be done under anesthesia. Dr. Huntington favored the combined plan of incision and dilatation.

A paper was read by DR. ROSENSTEIN on the subject of "Treatment of Stricture of the Urethra." He briefly detailed his experience with the employment of gradual dilatation and internal urethrotomy. In summing up he stated that he decidedly favored gradual dilatation, and that in his opinion internal urethrotomy will eventually be abandoned because of the dangers associated with the operation, and because the cure after urethrotomy is not any more permanent than after gradual dilatation.

DR. THOMAS, of Pennsylvania, said that in certain cases he decidedly favored internal urethrotomy, in others divulsion.

DR. HUNTINGTON remarked that he rather favored internal urethrotomy, as gradual dilatation did not always cure the discharge.

DR. DODGE, of Michigan, said that he had seen worse reactions from the use of the sound than from internal urethrotomy.

It seemed to be the consensus of those present that internal urethrotomy was well adapted to many cases, and that it will always occupy a place in surgery.

It was also thought by many that the cure of stricture is not a permanent one, and that sounds have to be used at shorter or longer intervals to keep the stricture from again contracting.

FOURTH DAY—JUNE 8TH.

The first paper presented was entitled "New Plastic Operation for Varicocele," with presentation of a case, by DR. O. J. MAYER, of San Francisco. The feature of the operation is the transverse suturing of the longitudinal wound, by which the scrotum is considerably shortened. A case that had been operated on was presented.

Dr. MAYER then read a paper on "Bloodless Vaginal Myomectomy," the essential step in the operation being the temporary ligation of the uterine arteries.

An interesting and instructive paper was presented by G. W. WOODS, of Mare Island, California, on "The Use of Acetanilid in Medicine and Surgery, with Special Reference to its Use in Minor Surgery." He maintained that acetanilid is a good antipyretic, and not poisonous if given in small doses at the commencement, even to children. It acts slowly, and is both a diaphoretic and diuretic. It may be given in any and all fevers and inflammations. It is a good substitute for iodoform in venereal sores. Its application to a granulating surface is followed by a burning sensation, which, however, persists only a short time. It is useful in the dressing of all forms of burns, ulcers, moist eczema, gunshot wounds, abscesses, etc. When applied to extensive granulating surfaces it sometimes produces cyanosis, which is not due to a disturbance of circulation, but to deficient oxygenation of the blood. The following advantages of acetanilid as a surgical application were pointed out: Its cleanliness, its lack of odor, its antiseptic and desiccating qualities, its practical freedom from toxicity, the absence of crusting and the ease of removal, the insignificant cost, and its resistance to moisture.

A paper, by DR. THOMAS, of Pennsylvania, on "How Long is Syphilis Contagious?" followed. He expressed his conviction that syphilis is only contagious in the primary and secondary stages—that is, only for three or four years after the primary lesion.

A very rare and interesting case of multiple, symmetrical, bilateral lipomata was then presented by DR. SCHIELS. The lipomata were not limited to any partic-

ular part of the body, but occupied positions from the neck down to the groin.

DR. BONWILL, of Philadelphia, then read a paper on "A Surgical Engine." This engine, which was very similar to the ordinary dental engine, caused the trephine or burr to revolve from 100 times to 20,000 times a minute. It is said to be adapted to the performance of all sorts of surgical operations, both upon the soft parts and upon bony tissue.

DR. JOSEPH RANSOHOFF, of Cincinnati, was elected Chairman, and DR. REGINALD H. SAYRE, of New York, Secretary.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

SECOND DAY—JUNE 6TH.

The first paper was one by DR. LLEWELLYN ELIOT, of Washington, D. C., on the subject of "Placenta Prævia." In his absence, the paper was read by the Secretary. Placenta prævia was considered, next to puerperal convulsions, the most serious complication that can occur to the puerpera. The physician is usually not called till hemorrhage has appeared. No woman should be allowed to suffer from these hemorrhages if the child is viable, for it is as easy to resuscitate a child at seven months as it is a child at nine that has been subjected to the weakening effects of repeated hemorrhage. It was considered the proper course to pursue, to forcibly dilate, turn, and deliver, the child acting as a tampon in controlling the hemorrhage. Dr. Eliot would hesitate to resort to Cesarean section.

DR. ESHLEMAN, of Fresno, said that placenta prævia is much more common than is generally supposed, a large number of abortions being due to this complication. He objected to forcible dilatation and introduction of the hand for the performance of version. All that is necessary is to dilate the cervix sufficiently to introduce a small forceps, seize the head, and using it as a tampon, bring it down and deliver the child. The os is usually very dilatable, particularly if the hemorrhage has been severe.

DR. MCCHESNEY, of Philadelphia, said that in a case of placenta prævia there is no time for nice distinctions. One must use what means he can to dilate the cervix, then turn, and deliver. Hemorrhage after delivery is checked by copious injections of hot water, massage, and ergot, or ergot and strychnin hypodermatically, or by the mouth.

DR. MARTIN, of Chicago, said that it had been noticed formerly that fever invariably followed the delivery of women in cases in which it had been necessary to introduce the hand into the uterus. We know now the cause of this. As much care should be taken in preparing the hands preliminary to introduction into the cervical canal and uterus as in a case of celiotomy. He recommended for this purpose the use of a saturated solution of potassium permanganate and oxalic acid, as used at the Johns Hopkins Hospital.

DR. MONTGOMERY, of Philadelphia, believed that placenta prævia was the one condition in which the life of the child should not be considered. In central placenta prævia hemorrhage usually begins about the fifth month. The patient may have a fatal hemorrhage at any moment. As soon as the diagnosis is established the uterine contents should be evacuated. When there is lateral implantation and the hemorrhage slight and later, we may temporize; but even in these cases it is well to bring on premature labor. Cesarean section was not deemed necessary or advisable.

DR. NEWMAN, of Chicago, thought that dilatation, version, and delivery constituted the best and safest method. The case should be treated strictly on surgical principles. With regard to the use of an anesthetic, he would hesitate to use chloroform after extreme hemorrhage. He thought better work was done with the use of an anesthetic, and ether was safe.

DR. E. M. WESTLEY, of California, has adopted different methods. If the patient is exsanguine when the physician arrives the life of the child cannot be considered. The placenta should at once be detached and brought down; then the head of the child should be brought down and the child delivered. If hemorrhage is slight and the child alive, version before delivery is to be preferred.

DR. ESHLEMAN, of Fresno, Cal., emphasized the fact that in turning it was necessary to dilate the cervix to the size of the physician's hand and run all the risk of septic infection. In introducing the forceps according to his method, a dilatation of an inch was sufficient.

DR. CARPENTER, of Pennsylvania, reported that he has had three cases lately. In two he applied the forceps high up after getting the head into position by external manipulation. He then brought the head down so as to compress the placenta, which had previously been pushed to one side. In one case he held the forceps in place one-half hour before dilatation was accomplished. The patients were sustained by hypodermatic injections of whiskey and strychnin. In the third case, one of central implantation, he found the patient moribund when he arrived. He tore through the placenta and found a foot, which he seized, and delivered the child as soon as possible. The patient died. With the hemorrhage controlled the physician can afford to wait, and Dr. Carpenter believed that if he had been less hurried in his procedure, and had improved the delay by the administration of proper stimulants, he might have saved his patient.

A communication upon "Tetanus Puerperarum," by DR. ALLISON MAXWELL, of Indianapolis, was read by Dr. E. E. Montgomery. The history of a case of this rare disease was detailed, the etiology of the disease reviewed, and besides prophylactic measures, the use of antispasmodics and the antitoxin recommended in its treatment.

DR. MCCHESNEY, of Philadelphia, said that the offending cause resided in some kind of diet. The disease presupposed some point of infection, and should have directed against it local treatment aimed at its removal. In a case in which the initial symptoms of tetanus had appeared, Dr. McChesney used an intra-uterine douche of two quarts of a 1:3000 bichlorid solution every eight hours, following this by water that had been recently boiled. He used at the same time hypodermatic injections of atropin and rectal injections of peptonized milk.

At the request of the inventor, DR. MONTGOMERY presented an instrument designed to be used in cases of prolapsed uterus to fix the uterus to the abdominal wall. The instrument was generally condemned.

The PRESIDENT replied to some remarks made in the

Surgical Section reflecting upon private hospitals and their owners. He said that the attack upon private hospitals struck at the very life of abdominal surgery. It was in a private hospital that it was born, nourished, and grew to full maturity. He resented the imputation of dishonesty on the part of surgeons.

THIRD DAY—JUNE 7TH.

DR. X. O. WERDER, of Pittsburg, Pa., read a paper entitled "A Case of Didelphic Uterus, Unilateral Hematometra, Hematosalpinx, and Hematocolpos."

At the conclusion of this paper DR. CHESTNUT, of Philadelphia, moved an adjournment, so that the members might participate in the General Session. The motion was carried and the Section adjourned to 3 P.M.

At 3.30 P.M., the President of the Section being absent, DR. MEADE, of San José, moved that Dr. G. W. Davis, of San Francisco, act as temporary chairman, and that the work of the Section proceed. The motion was carried and Dr. Davis took the chair.

DR. BRIGGS, of Sacramento, read a paper on "The Function and Form of Obstetrical Forceps," using in demonstration instruments invented by himself.

DR. E. S. MEADE, of San José, pointed out that these forceps presented an anatomic defect, as the pelvic curve was wanting. She thought the instrument was too complicated. Great force was not necessary in delivering a child with instruments. She applied the forceps, used traction during the pains, and readjusted the instruments as it might be necessary during the intervals between pains. Sometimes as long as half an hour would be necessary to accomplish the delivery. Too often physicians thought only of quick work, without considering whether or not the mother and child were wounded. She considered that it was impatience and lack of anatomic knowledge that destroyed so many uteri and perinei.

DR. OSCAR MAYER, of San Francisco, thought the complicated nature of the instruments was opposed to the principles of obstetric asepsis.

DR. WINTERBERG, of San Francisco, thought it a very easy matter to find an obstetric case in which this and all other necessary instruments can be placed and the whole thoroughly sterilized by heat.

DR. BRIGGS said that the curve was greater than it seemed, being equal to three inches. It appeared less than this because the handle was parallel to the axis of the blade, while in the ordinary forceps it formed an angle.

DR. OSCAR J. MAYER, of San Francisco, read a paper upon "Massage in Gynecology." He said the object of uterine massage is to bring about a healthier state of the circulation and to impart tone to the various structures of the genital tract. It is indicated in all chronic inflammatory disorders, as well as in conditions that cause uterine displacements, such as relaxation of the ligaments or pelvic exudation, with or without adhesion. It is very important to form a correct diagnosis of the disease and to exclude all pyogenic disorders. The indications for massage in gynecology are the same as those for massage in surgery. By massage-treatment it is hoped to produce: 1. Acceleration of the absorption and retrogression of inflammatory and traumatic exudation and deposits. 2. Stretching, loosening, disintegration of cicatricial or hypertrophied connective tissues, caused by inflammatory processes. 3. Stimulation of the circulation and restoration of the normal elasticity and tone in (*a*) contracted, hardened, and hypertrophic tissues, or (*b*) relaxed tissues.

The sphere of usefulness may be tabulated as follows: 1. Pelvic exudations and hemorrhagic infiltrations. 2. Chronic parametritis and perimetritis. 3. Retroversion of the uterus. 4. Chronic metritis. 5. Prolapse of the uterus and vagina.

Massage is contra-indicated in all diseases of the genital tract requiring perfect rest of the whole body or of the genital tract alone.

The best and quickest cures from massage are observed in chronic diseases following the puerperal state. A longer time is required in conditions following acute inflammatory processes; also when coincident with anomalies of position of the pelvic organs, especially in retrodeviations of the uterus. Even if we do not succeed in some cases in restoring the uterus to its exact normal position we can obtain a symptomatic cure without recourse to surgical procedure. The combination of massage with electricity is to be recommended in the relaxations of the supports of the uterus, provided the structures are intact.

By exercising proper circumspection, we can often achieve more by alternating massage with other treatment than by long-continued massage. It was not claimed that massage constitutes an independent and sufficient form of treatment. It is only a mechanical therapeutic agent, intended to be used in combination with other tried and accepted remedies, in affecting a permanent cure, or in considerably lessening the time formerly required therefor. American gynecologists have been somewhat slow in accepting massage as a new remedial agent to be employed in diseases of women, and have been suspicious of the beneficial results that have been claimed for it. But the constant encouraging reports of European authorities, many of them at first bitter opponents of massage, are bound to work a change in this American sentiment.

DR. J. H. BARBAT, of San Francisco, bore testimony to the great good accomplished by massage, combined with electricity and glycerin tampons, even in cases in which the removal of the ovaries had been recommended by competent physicians.

DR. SHUEY, of Oakland, Cal., said that she had used massage in the painful menstruation of young women with the result of conferring perfect relief. The treatment was repeated every day for three or four weeks, and for three or four months longer during the menstrual period.

Dr. C. N. Martin was elected Chairman, and Dr. X. O. Werder, Secretary, for the ensuing year.

ASSOCIATON OF AMERICAN ANATOMISTS.

Sixth Annual Meeting, held at Washington, D.C., May 29, 30, 31, and June 1, 1894.

THE Secretary reported that Dr. Charles B. Ewing and Dr. F. C. Schaefer had resigned, and that three members had died, namely: Dr. William Lee, Dr. William B. Towles, and Dr. Corydon L. Ford.

The following new members were elected: Dr. John

A. Boger, Dr. H. B. Ferris, Dr. Robert L. Greene, Dr. William Keiller, Dr. Joseph Leidy, Dr. Mary B. Moody, Mr. Robert O. Moody, Dr. Charles D. Smith, Dr. William O. Stillman, Dr. W. C. Woodward. Sir William Turner, of London, was elected an honorary member.

The officers elected for the ensuing year were: Dr. Thomas Dwight, President; Dr. B. G. Wilder, First Vice-President; Dr. F. J. Shepherd, Second Vice-President; Dr. D. S. Lamb, Secretary and Treasurer.

Professor C. L. Herrick, of Denison College, Granville, Ohio, Delegate to the Congress of American Physicians and Surgeons; Dr. D. K. Shute, Alternate. Dr. Theo. N. Gill was elected to the vacancy in the Executive Committee.

The following papers were read: "On the Identity of Structure of Protoplasm with that of Striped Muscle," by Dr. Carl Heitzmann, of New York City.

"Some Problems relating to the Cerebral Fissures," by Dr. Burt G. Wilder, of Ithaca, N. Y.

"A Plea for a Methodically-written Text-book on Anatomy," by Dr. Edmond Souchon, of New Orleans.

"The Study of the Human Cranium;" also, "The Shortening of the Face-axis in the Evolution of the Mammalia," by Dr. Harrison Allen, of Philadelphia.

"Methods of Estimating the Height from Parts of the Skeleton," by Dr. Thomas Dwight, of Harvard University.

"The Perineum and Perineal Body," by Dr. D. K. Shute, of Washington, D. C.

"The Study of the Muscular Tunic of the Large and Small Intestine of Man in the Region of the Cecum; also, "A Note on the Occurrence of the Scapuloclavicular Muscle," by Mr. R. O. Moody.

"Theoretical Anatomy of the Sympathetic System," by Dr. William Carr, of Columbian University, Washington.

"The Female External Genital Organs: a Criticism on Current Anatomical Description," by Dr. Lamb, of the Army Medical Museum, Washington, D. C.

The following papers were read by title in the absence of the authors:

"In Our Two Years' Study of Anatomy what part of the Subject should be Covered in the First Year's Work, what part in the Second?" by Dr. A. D. Bevan, of Rush Medical College.

Two papers, by Professor P. A. Fish, of Cornell University, namely: "The Form and Relations of the Nerve-cells and Fibers in Desmognathus Fusca," and "The Terminology of the Nerve-cell."

An abstract of these papers and the discussions will be published with the proceedings of the Association.

NEWS ITEMS.

A Pestilence in China.—It is reported that China has been visited by a pestilence which is said to resemble in character the great plague of London in 1665. The plague first appeared at Canton toward the end of April, following a period of prolonged drought. Tens of thousands of persons are said to have succumbed to its ravages in Canton and Pakhoi. It was first observed at Hongkong on the 8th of May, and on the 10th from thirty to forty deaths were reported daily. The disease is described as of a bubonic character, with purplish or black swellings of the glands, in the groins, armpits, under the knees, and in the neck, accompanied by intense fever, the temperature rising to 105° or 106°. It is rapid in its course. With or without premonitory warning in the shape of malaise or chill, there is a sudden elevation of fever, rising to 105° or over. There is much headache and cerebral disturbance, accompanied by stupor. Diarrhea at once sets in, and a state of delirium followed by coma is reached in three or four hours in bad cases, death ensuing, and the body turning black and becoming putrid and swollen to thrice its size in the course of from twelve to twenty-four hours. In other cases, in from twelve to twenty-four hours glandular swellings appear in the neck, armpits, and groins, rapidly enlarging to the size of fowls' eggs. They are hard and exceedingly tender. With or without a decline of the fever the patient sinks more deeply into a condition of coma and dies, usually at the end of forty-eight hours or sooner. If six days are reached recovery is hopeful. The glandular swellings show no signs of suppuration. In some cases epistaxis or hematemesis occurs; petechiæ appear in a few cases, but there is no regular eruption. Very strong men have resisted the attack for two days and then succumbed, but as many as 80 per cent. of those attacked in Canton died in one day. Those who held out for three or four days generally recovered, but they were very few.

A German Emgirant-station.—It is reported that the North German Lloyd and Hamburg-American steamship companies have taken steps to establish jointly an emigrant-station at Illowo, East Prussia, where steerage-passengers will be received, examined, washed, and disinfected before going aboard ship. The sheds at Illowo will cover some four hundred and fifty square meters.

An official notice says that the cholera was brought to Myslowitz, on the East Prussian frontier, by a Russian tramp. The members of the Health Board are convinced that the cholera is not likely to spread far from the frontier. All the patients have been isolated and no fresh case has been reported for several days.

Changes in the Woman's Medical College of Baltimore.—Dr. Charles E. Simon has been elected Professor of Physiology and Histology; Dr. Charles O'Donovan, Professor of Diseases of Children; Dr. Pearce Kintzing, Professor of Chemistry; Dr. Berwick B. Lanier, Lecturer on Pathology; Ralph Robinson, Esq., Lecturer on Medical Jurisprudence; Dr. Claribel Cone, Lecturer on Hygiene. The seven-months' session will be lengthened to eight months. A three-years' course has been required since 1884.

The Church and Cremation.—The Pope has expressed his opinion that cremation, while heretic in principle, may be allowed under special conditions which amount to a guarantee against a public scandal. The Catholic clergy may officiate at services over bodies which are to be cremated, but not at a crematorium.

Sir James Paget and Lady Paget celebrated the golden anniversary of their wedding-day on May 23d.

Dr. George G. Shoemaker died at his home at Knox, Pa., on May 20, 1894, at the age of thirty-eight years.

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ORIGINAL ARTICLES.

CHRONIC VALVULAR DISEASE OF THE HEART.[1]

A Study from Clinical Observations of 1024 Cases, with Especial Reference to the Causative Influences and the Relative Distribution of the Lesions.

BY THOMAS G. ASHTON, M.D.,

CHIEF OF THE OUT-PATIENT MEDICAL DEPARTMENT IN JEFFERSON MEDICAL COLLEGE HOSPITAL, AND DEMONSTRATOR OF CLINICAL MEDICINE IN JEFFERSON MEDICAL COLLEGE.

ALTHOUGH in the analysis of the following cases some points already well known are reiterated, the number of cases collated is so large that even a confirmation of these facts cannot fail to be of value. In addition to this, however, I trust that the report will be found to possess features that will throw additional light upon the interesting subject of which it treats. These observations were made during a period of six years in the course of examinations of applicants for life-insurance. I regret that I am unable to give the total number of cases examined, and thus indicate the prevalence of valvular diseases in its various forms.

Statistics dealing with the relative frequency with which the different cardiac valvular lesions occur, together with the various combinations and associations of these lesions, are found to differ very much. The reason for this difference becomes obvious if we take into consideration the different conditions under which the observations are made. If these observations be made in a series of cases which have never presented so-called cardiac symptoms, and in which the finding of the cardiac disease occurred accidentally, as in the course of a routine examination, the result will be found to differ vastly from that obtained by analyzing a series of cases manifesting cardiac symptoms, and which seek advice on account of those symptoms. In the former group of cases the predominating lesions will be found to be simple in character and unassociated with any alterations in other valve-systems; in the latter there will be found to predominate those pure and associated valvular lesions that are most prone to give rise to changes in the walls of the heart, and hence cause cardiac symptoms.

Again, if we compare the results obtained under either of the conditions noted with those obtained by post-mortem examinations the difference will be yet more striking. Of course, the results obtained from post-mortem examinations are accurate as regards evidence of organic disease, but such results would not represent the frequency with which cardiac bruits are heard during life, as murmurs, and especially the murmur of mitral incompetency, occur in many cases that at the autopsy fail to present demonstrable lesions.

At the outset, therefore, it is well to understand that this report includes but few cases that presented cardiac symptoms, and that in almost every instance the cardiac lesion was discovered in individuals presumably in the best of health and themselves totally unaware of the existence of any serious disease. For this reason it will be found that the number of cases presenting combined or associated lesions is relatively small, and from this standpoint alone the study of these cases assumes additional interest as emphasizing the well-known fact that cardiac disease may exist for years and the knowledge of his condition not be forced upon the attention of the victim.

In order to present the facts of the report in as clear a manner as possible I have tabulated the cases in such a way as to show the relative frequency of the various valvular lesions, the predisposition of the sexes, the various ages at which the lesions were found, and such history of antecedent disease as it was possible to obtain and to which might be ascribed the existence of the valvular disease. (See table on next page.)

In common with other statistics, the fact is brought out in this analysis that in by far the largest percentage of cases the mitral valve was the seat of the lesion.

Thus we find that there were of cases of—

	Males.	Females.	
Mitral insufficiency	295	262	557
Mitral stenosis	15	17	32
Mitral stenosis and insufficiency combined	13	19	32
The total being			621

or 60.6 per cent. of the entire number of cases under observation.

The percentage of cases showing simple mitral insufficiency is 54.4 per cent., while the lesions of mitral stenosis alone and combined with insufficiency each reached 3.13 per cent.

[1] Read before the College of Physicians of Philadelphia, June 6, 1894.

There were of cases of—

	Males.	Females.	
Aortic stenosis	101	35	136
Aortic insufficiency	32	15	47
Aortic stenosis and insufficiency combined	27	11	38
The total being			221

or 21.58 per cent. of the total number.

Of combined aortic stenosis and insufficiency associated with mitral insufficiency there were 93 cases, or 9.08 per cent. of the cases collated, and of these 65 occurred in males and 28 in females.

Of aortic stenosis associated with mitral insufficiency there were 45 cases, or 4.39 per cent. of the total—31 of these occurred in males and 14 in females; while of aortic insufficiency in association with mitral insufficiency there were 33 cases, or 3.22 per cent.—26 occurring in males and 7 in females.

Insufficiency of the tricuspid valves was met with in 11 cases, or 1.07 per cent. of the whole, 7 being in males and 4 in females.

sponds closely with that found by Duroziez,[1] it is at marked variance with the results obtained by Middleton,[2] who found that women are more liable to these lesions than men, the proportion being three of the former to one of the latter. With Middleton's statistics also agree those of F. J. Smith,[3] which are based upon an analysis of the records of the London Hospital for eleven years, and which show that mitral stenosis, alone and combined with incompetency, occurred in 71 women and 22 men.

To aortic disease we find that the male sex is much more liable than the female; thus, including all cases in which evidence of aortic disease existed, whether associated with mitral disease or not, there were 282 men and 110 women, a proportion the accuracy of which is corroborated by an analysis of F. J. Smith's statistics, which show that 263 cases of aortic disease occurred in men, while in only 105 cases were women the subjects of this lesion.

This difference in the relative liability of the sexes to the various valve-lesions is, I think, readily explained by the fact that mitral lesions usually result

Lesion.	Sex.		Age.																Occupation.		Antecedent history.						Total.	Per cent.
			1–10		11–20		21–30		31–40		41–50		51–60		61–70		71–80											
	Male.	Female.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Light.	Laborious	Rheumatism.	Infectious fevers.	Syphilis.	Alcoholism.	Negative.	Sclerosis or atheroma of blood-vessels.		
Mitral incompetency	295	262	14	12	43	69	118	54	41	29	37	35	31	40	11	23	...	...	223	334	[4]213	54	47	93	125	169	557	54.40
Aortic stenosis	101	35	3	1	5	1	9	4	15	6	27	11	32	10	10	2	...	...	43	93	42	15	17	34	23	59	136	13.28
Aortic stenosis and incompetency, with mitral incompetency.	65	28	7	3	4	8	10	5	6	3	15	5	10	4	6	...	1	...	34	59	37	8	15	18	11	32	93	9.08
Aortic incompetency	32	15	2	3	1	1	4	2	5	1	8	4	9	3	3	1	...	...	19	28	18	4	3	10	9	13	47	4.59
Aortic stenosis and mitral incompetency.	31	14	1	...	3	1	4	1	3	2	7	3	9	4	4	2	...	1	15	30	15	3	5	13	6	17	45	4.39
Aortic stenosis and aortic incompetency.	27	11	1	...	2	1	4	...	5	2	6	2	8	6	1	...	...	...	9	29	17	4	3	5	7	15	38	3.71
Aortic incompetency and mitral incompetency.	26	7	2	1	2	2	6	1	2	...	4	...	7	3	3	...	...	...	9	24	16	4	0	5	6	9	33	3.22
Mitral stenosis	15	17	3	2	5	8	2	4	1	...	4	2	...	1	...	...	...	...	20	12	10	2	0	3	16	4	32	3.13
Mitral stenosis and mitral incompetency.	13	19	4	7	4	3	2	...	...	3	1	4	1	2	1	...	..	...	19	13	13	4	1	2	9	6	32	3.13
Tricuspid incompetency	7	4	4	3	...	1	...	...	2	...	1	...	...	...	...	...	...	...	9	2	2	2	0	1	6	0	11	1.07
	612	412	41	32	69	95	159	71	80	46	110	66	113	73	39	28	1	1	400	624	383	100	91	184	218	324	1024	100.00

A study of the relative liability of the sexes to cardiac valvular disease, based upon the accompanying table, shows that a considerable majority of the cases occurred in males: thus, 612 men, or 59.77 per cent., were affected, while the disease was found in only 412 women, or 40.23 per cent. of the whole, although the number of each sex examined was about the same.

By lesions of the mitral valve the sexes were almost equally affected, there being in a total of 621 cases but 25 more males than females. In a total of 64 cases in which mitral stenosis, alone or combined with mitral insufficiency, was found, the relationship of the sexes was 28 men to 36 women. While this relative liability of the sexes to these lesions corre-

from a cause to which, taking all ages together both sexes are almost equally liable, viz., rheumatism. On the other hand, as aortic disease occurs most frequently as the result of arterial sclerosis and atheroma, and as men are more frequently the subjects of the causes, such as laborious occupations, syphilis, and alcoholism, which lead to sclerotic changes in the vessels and valves, it follows that they are more predisposed to aortic disease than women.

[1] Traité Clinique des Maladies du Cœur, Paris, 1891, p. 319.

[2] Lancet, London, October, 1889

[3] Sansom: The Diagnosis of Diseases of the Heart and Thoracic Aorta, 1892, p. 387.

[4] Including 6 cases of chorea.

An analysis of the ages yields a number of interesting results. Up to the sixtieth year of life, the period at which valvular disease of the heart occurs least frequently is between the first and tenth years. After the sixtieth year there is a sudden decline in the number of cases, probably because many have already succumbed to the effects of the disease.

During the first decade of life the sexes show almost an equal predisposition to mitral disease, while during the second decade a considerable majority of cases occur in women. Statistics show that during this period of life acute rheumatism affects the female more frequently than the male, and this observation is confirmed by the fact that we find from the table, that at this age mitral disease occurred in 81 women and 52 men. In the decade between twenty and thirty, however, we enter upon that period of life most prone to endocarditis.[1] At this time, as men by their mode of life and occupations are more predisposed to acute rheumatism than women, and as the mitral valve, as already stated, is the one most frequently affected by rheumatism, the statistics under consideration show that 122 males were affected by mitral disease and only 58 females. In the succeeding two decades, also, the preponderance of instances of mitral disease is with the male rather than with the female, while subsequently the relative positions of the sexes are again reversed.

As would naturally be supposed, but a small proportion of the cases of aortic disease are shown to occur in early life. It is not until after the thirtieth year that the effect of those causes which eventuate in the production of sclerotic changes begins to be evident. Thus, prior to the thirtieth year we find that there were only 105 cases in which the existence of aortic disease was discovered, while after the thirtieth year the number of cases showing aortic disease was 287. Or if, in order to have for comparision two periods of equal duration, we deduct from the latter figure those cases occurring after the sixtieth year, the proportion will be found to be 105 cases from the first to the thirtieth year and 253 cases from the thirty-first to the sixtieth year.

The cases of tricuspid disease noted number 11, the lesion consisting in incompetency of that valve. In every instance the disease was primary and not a relative incompetency depending upon mitral disease. In order that we may understand the reason for the non-occurrence of the latter condition in a single instance, it must be remembered that these statistics include but few cases that presented cardiac symptoms, and it seems hardly possible that mitral disease should progress so far as to produce relative tricuspid incompetency and at the same time cause no rational signs of cardiac disease.

A point of extreme interest in the analysis of these cases of tricuspid disease is the age at which the majority of them were found. In 7 of the 11 cases the age was between the first and the tenth year. In only one of these cases was a personal history of rheumatism obtainable; but in four of them, three males and one female, an hereditary tendency to rheumatism was clearly made out, in one instance upon the paternal, in the other three upon the maternal side. The presumption seems, therefore, justified that, in these cases at least, the lesion was congenital, the result of endocarditis occurring during fetal life, at which time, as is well recognized, the right heart is more prone to suffer from endocarditis than the left.

A result shown by the table that I am unable to explain is the relative infrequency with which pure mitral stenosis, or mitral stenosis combined with incompetency, is found to occur. Guttmann,[1] in stating the relative frequency with which the various valve-lesions are found, places the combined lesion of mitral stenosis and incompetency directly after the lesion of pure mitral incompetency. So also, Middleton's statistics, already quoted, show pure mitral stenosis and mitral stenosis combined with incompetency to occur in almost as many cases as do all the lesions of the aortic valves combined. In this connection, also, Sansom states that the most frequent combined murmurs, restricting the word combined "to murmurs of differing rhythm generated at one orifice," are the presystolic and systolic mitral of stenosis and incompetency; and the table of F. J. Smith, quoted by Sansom, shows this lesion to have occurred in nearly 9 per cent. of the cases analyzed by him, occurring next but one in frequency to the lesion of mitral incompetency. The presystolic murmur of mitral stenosis, uncombined with the systolic murmur of mitral incompetency, is, however, shown by Dr. Smith's tables to have occurred in 3.38 per cent. of his cases—a result which corresponds very closely with that noted in the table upon which the present article is based, where it will be seen that this lesion occurred in 3.13 per cent. of the total number of cases.

Pure aortic stenosis, uncombined or unassociated with other valve-lesions, is found to occur in a much larger proportion of cases than is shown by the table of F. J. Smith, or the statistics adduced by Middleton. In explanation of this variance I must again call attention to the fact that but few of the cases here considered presented cardiac symptoms; hence complex lesions, which are so much more likely

[1] Rosenthal: Real-Encyclopädie der gesammten Heilkunde, 1887, Bd. ix, S. 391.

[1] Real-Encyclopädie der gesammten Heilkunde, 1887, Bd. ix S. 353.

to produce these symptoms, are relatively few in number.

An analysis of the various factors in the antecedent history of the cases to which might be ascribed the causation of the valve-lesions shows that a clear history of rheumatism, or rheumatic pains, was obtained in 383 cases, or 37.40 per cent. of the whole. An antecedent history of the infectious fevers was the only cause that could be adduced to account for the endocarditis in 100 cases, or nearly 10 per cent. of the total. These cases include only those in which one or more of the infectious fevers constituted the sole ascertainable cause to which the disease might be ascribed. In those instances in which a history of the infectious fevers was obtained, in conjunction with a history of the more probable causes of endocarditis, such as rheumatism, alcoholism, or syphilis, the latter were considered as the etiologic factors in the production of the disease.

A history of syphilis, undoubted or obscure, was obtained in 91 cases, or nearly 9 per cent. of the total; and a history of alcoholism in 184 cases, or nearly 18 per cent. of the total. In all the cases in which a history of syphilis or of alcoholism was elicited, decided arterial sclerosis or atheroma was present; and in this connection it may be well to call attention to the large number of cases in which this condition of the bloodvessels was present. In 324 cases, or over 31 per cent. of the whole, disease of the vessels existed, and in many instances arterial sclerosis was the only apparent cause for the valvular lesion.

An interesting fact, to which I would call attention, is the large number of cases for which no cause could be assigned. These number 218, or over 21 per cent. of the whole. In Middleton's cases a history of rheumatism was obtained in over 62 per cent. of the cases, while in over 37 per cent. no rheumatic history could be elicited. That so many cases of chronic valvular disease of the heart should exist without evident cause is remarkable. Many of these cases were found in young individuals whose occupations entailed no overstrain, and from whom, by the closest questioning, no history of rheumatism, or even rheumatic pains, could be obtained. Upon close inquiry into the family history, however, the frequency of the occurrence of rheumatism in either parent was remarked. I think the knowledge to be gained from this fact is the probability of rheumatism producing endocarditis, even when the disease produces no evident disturbance of the functions of the joints; and that, therefore, the endocardium may, in some instances, be the only serous membrane that the rheumatic poison may attack. That this is a rational explanation of the occurrence of endocarditis in this class of cases is, I think, confirmed by the fact that in many of them a family history of rheumatism was obtained, that the age at which the disease was found was in many instances during that period of life most prone to rheumatism, and by the further fact that no other cause for the existence of the disease could be elicited.

In reference to occupation, it will be noticed that most of the cases occurred in those whose occupations were laborious. The statistics were collated from among the working class of people, whose daily work, as a rule, entailed the severest kind of muscular exertion. Laborious occupations favor the development of cardiac valvular disease, for the most part by causing either heart-strain or arterial sclerosis. It is not surprising, therefore, that a history of hard work should have been obtained in such a large proportion of the cases.

In conclusion I would say that all doubtful cases have been excluded from these statistics; that, as far as possible, only cases of chronic valvular disease have been included, and that all cases possessing murmurs of possibly hemic or functional origin have been carefully sifted out.

ELEPHANTIASIS.

By L. L. HILL, M.D.,
of Montgomery, Ala.

In discussing the geographic distribution of elephantiasis, we find the assertion made by some American writers that it is a disease of great rarity in this country. Such statements are misleading, as it is by no means a surgical curiosity among the negro race in this, the so-called "Black Belt" of Alabama.

Elephantiasis is more common in adult life, though it may be congenital. It occurs three times as often among men as among women. Damp, malarious regions and bad hygienic surroundings, common conditions with the negro race here on cotton plantations, are important predisposing influences.

There are different grades of elephantiasis, "from moderate thickening of the skin and subcutaneous tissue up to enormous enlargement, and similarly great variations in aspect exist, according to the papillary hypertrophy or lymphatic and blood-vessel varicosity and their relative proportions," but every grade is the result of occlusion of the lymphatic channels, and it matters not whether involving the trunk or periphery of circulation. The obstruction may be congenital or due to filaria sanguinis hominis, cicatricial contractions, tumors or tuberculous or carcinomatous infiltration, or to an acute infective inflammation.

The result of this obstructive lymphangitis is an

edema, rich in active leukocytes, which, according to Robinson, not only become connective-tissue corpuscles, but also induce a hyperplasia of the fixed cells already present, producing a hardening and thickening of the skin, with general connective-tissue hypertrophy and increased vascularity, but muscular wasting.

The symptomatology of elephantiasis in its commencement varies according to whether the disease is endemic or sporadic, though the ultimate termination, pathologically, is the same. According to Mr. Crocker, of London, the beginning of the endemic presents a similarity to the remittent type of malarial fever, differing, however, in that the fever is of greater severity. The affected parts rapidly increase in size and present an erysipelatous blush, with great tenderness. A milky exudation is often present. Such an attack is usually followed by a calm, which may last for months, when there occurs another outburst, always leaving the part larger than before. In elephantiasis scroti the spermatic cord frequently becomes involved to the extent of dilating the abdominal ring, so that upon the subsidence of the swelling a hernia occurs.

In the East, where the disease is endemic, it is almost invariably the result of a parasitic nematode. The worm was first discovered by Bancroft, of Brisbane, in 1876, and is described by Patrick Manson as "a long, slender, hair-like animal, quite three inches in length, but only $\frac{1}{100}$ inch in breadth, of an opaline appearance, looking as it lies in the tissues like a delicate thread of catgut animated and wriggling. A narrow alimentary canal runs from the simple club-like head to within a short distance of the tail, the remainder of the body being almost entirely occupied by the reproductive organs. The vagina opens about one twenty-fifth of an inch from the head; it is very short and bifurcates into two uterine horns, which, stuffed with embryos in all stages of development, run backward nearly to the tail." The male worm is smaller and not as frequently found. These entozoa are often conveyed from one person to another by mosquitoes sucking blood containing filaria and afterward contaminating drinking-water. Having once gained access to the human stomach, they bore through into the thoracic duct and pass to the lymphatics, where they locate. How they bring about an obstruction resulting in elephantiasis is not very clear, but the most plausible theory and the one generally accepted is Manson's, who says they give off embryos that, if of natural size, $\frac{1}{90}$ inch long and $\frac{1}{3200}$ inch broad, will circulate readily without disturbing the equilibrium of the host, but if prematurely discharged, they are shorter and thicker, $\frac{1}{750}$ inch in diameter by $\frac{1}{300}$ inch in length, and give rise to obstruction in the lymphatics and lymphatic glands.

In this country, where the disease is rarely of parasitic origin, there are no constitutional symptoms, unless of erysipelatous cause, and the development of the disease is always slow. The skin is coarse, darker than natural, and eczematous. Ulceration not infrequently occurs. The decomposition of the elephantoid discharges is very offensive.

In the sporadic cases there is usually loss of sensation, and mendicants with Barbadoes leg take advantage of this fact and stick needles and pins in their limbs to excite sympathy and increase their revenue.

The prognosis, so far as the life of the patient is concerned, is always very favorable, especially in this country, but the patient may be rendered miserable by the immensity of the growth—sometimes weighing more than one hundred pounds.

The treatment of the sporadic cases is very unsatisfactory without surgical interference. During the elephantoid fever of the endemic cases, Sir Joseph Fayrer recommends opium to relieve pain and magnesium sulphate to move the bowels, and a tonic of iron and quinin. Locally, he applies hot fomentations. A change of climate is of paramount importance as soon as the patient's condition will warrant removal.

My clinical experience with this interesting disease is limited to six cases, which I will briefly report:

CASE I.—W. D., a negro laborer, forty years of age, in good health, was sent to me by Dr. C. N. Dorsette, of Montgomery, Ala., in April, 1886, to be operated on for elephantiasis scroti. The enlargement extended a little below the knees, and weighed thirty-one pounds, seriously interfering with locomotion. The disease was confined to the scrotum; neither penis nor legs were involved. Unlike the two interesting cases of scrotal elephantiasis reported by Mr. Hutchinson in his *Archives of Surgery*, my patient gave no history of having had syphilis. In 1870, sixteen years before I saw him, he had gonorrhea, which caused a stricture, complicated with a perineal abscess. When I saw him there were two fistulæ, through which the larger portion of the urine was passed. About eighteen months after the formation of the abscess he gave a history of intense inflammation of the scrotum, which I suspect was a scrotal cellulitis the result of irritation from the fistulæ. After the subsidence of the acute attack the patient suffered no more pain, but noticed that the scrotum did not return to its normal size, but steadily increased.

I advised an operation, to which he readily consented. To render the operation as bloodless as possible, I had the tumor elevated for fifty minutes, and then applied a small rubber cord, tightly drawn, around its pedicle. To prevent slipping I had an

assistant hold it with retractors. I made a circular incision at the neck of the tumor, and as it deepened and reached the cords and testicles I dissected these out, and afterward partially covered them with skin loosened from the thighs. The numerous bloodvessels were ligated with catgut. Before the patient recovered from the anesthesia I dilated his stricture and tied in his bladder a catheter, which served the treble purpose of relieving the stricture, curing the fistulæ (despite the assertion of Sir Henry Thompson, that "tying in an instrument never insures the transit of all the urine through it; some will always escape by the side, and defeat its purpose"), and kept the penis from the granulating surface. In six weeks the patient left the city entirely relieved, and there is at this time no evidence of a return.

It occurs to me that Wyeth's method of controlling hemorrhage in hip-joint amputations might be used in these cases, provided an irreducible hernia is not present.

Case II.—N. T., a negress, forty years old, of Pike Road, Ala., was brought to me by her husband, in June, 1889. She had been married twenty years, but had borne no children. I found elephantiasis of the clitoris, but no other portion of the vulva was involved. The growth measured fourteen inches in circumference at its largest part, and had a pedicle of about half an inch in diameter. The surface was rough, irregular, and ulcerated in several places, but not sensitive to the prick of a needle. The vulva was covered with eczema, which gave rise to intolerable itching. The woman attributed the enlargement to the irritation caused by her scratching, which, she said, had commenced about ten years before I saw her. The patient had tertiary syphilis. I removed the clitoris with an écraseur, and at one point, where there was a tendency to bleed, I applied the Paquelin cautery, which completely controlled the hemorrhage. I placed the woman on antisyphilitic treatment, and used an ointment containing salicylic acid for the eczema. When last seen she reported her health as perfect.

Case III.—W. P., a very muscular negro, twenty-five years old, consulted me on February 5, 1893, concerning an elephantoid prepuce. I found it measuring near the frenum two and one-half inches in diameter, and four-fifths of its circumference involved. On the under surface, about one quarter of an inch behind the affected foreskin, was a cicatrix one-half inch in diameter, the result of a former chancroid, which he gave a history of having contracted twelve months previously. The prepuce soon afterward commenced to increase in size. There was no evidence that the patient had ever had syphilis. He suffered no pain, and had had no erection during the last four months previous to consulting me.

I applied a rubber band around the penis and injected thirty drops of a 4 per cent. solution of cocain just posteriorly to the diseased prepuce, where I made my incision, without pain. The vessels were tied with catgut, and the wound left to heal by granulation, which it did in three weeks. The growth was very hard and an unusually small quantity of the yellowish-white lymph exuded on pressure. The skin was smooth, as is generally the case when the under surface of the prepuce is involved, as it comes in contact with the thighs and scrotum.

According to Jacobson, of London, the statistics of the Calcutta Hospital show that only about 3 per cent. of the cases of elephantiasis commence in the prepuce. These cases were found in negroes, who usually have very long foreskins.

Case IV.—A. R., aged twenty years, white, of Greenville, Ala., was sent to me by the late Dr. Job Thigpen, in March, 1893, to be operated upon for elephantiasis of the penis. The patient stated that he had never been able to draw the prepuce behind the glans, and that the stream of urine had always been very small. About six years before consulting me he had noticed his penis getting larger, and this continued until the organ measured twelve inches in circumference, and was involved for three-fourths of its length. The elephantiasis was evidently due to the congenital stricture of the meatus urinarius and the phimosis.

After placing a rubber band around the root of the penis to control hemorrhage, I made an incision in the whole length of the organ, and extending in depth to the erectile tissue, which was normal, removing all of the diseased tissue. Loosening up the skin freely at the upper end of the wound, I was enabled to get a covering for two-thirds of the organ, and the balance was left to heal by granulation. Fearing an erection, I was careful to have the skin as loose as possible. I directed the man to sleep upon his side, and gave fifteen grains of sodium bromid three times a day for ten days. The patient made a good recovery, and was discharged in about five weeks. He has since married, and says the member gives entire satisfaction. I operated on the stricture by incision while the patient was under the influence of the anesthetic.

Kaufmann states that it is exceedingly rare to see cases in which the penis alone is involved without

the scrotum, this involvement occurring in about 1 per cent. of the cases.

The accompanying photograph gives a good idea of the patient's condition before the operation.

CASES V, VI.—These two cases were under my professional care at the County Almshouse, in 1887. They were both in negro men, and were so similar in their clinical aspect that I report them together.

S. J. was about fifty years old, and in fairly good condition, with the exception of elephantiasis of the whole leg and lower third of the thigh. The former was about double its normal size, and considerably ulcerated. The man stated that the growth had made its appearance about 1865.

F. W. was apparently sixty-five years old, with elephantiasis, involving more particularly the foot, but extending up the leg to within two inches of the knee-joint. Being feeble-minded, he could give no intelligent history of himself.

Neither case showed any evidence of ever having contracted syphilis.

The method of ligating the femoral artery to starve the growth, as was first performed by Dr. Carnochan, of New York, in 1851, has fallen into merited disrepute.

Martin's India-rubber bandage worn constantly renders the patient more comfortable than any other contrivance. In some cases amputation may be justifiable.

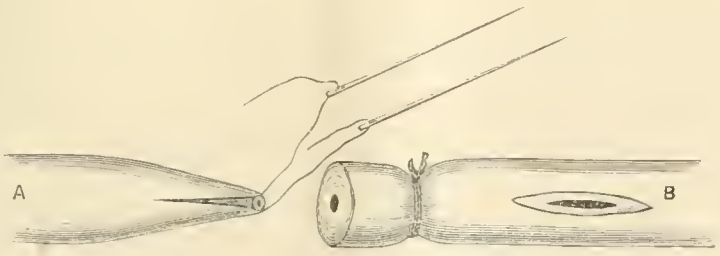
EXPERIMENTAL REUNION OF THE TRANSVERSELY DIVIDED VAS DEFERENS.[1]

BY WELLER VAN HOOK, A.B., M.D.,
PROFESSOR OF SURGICAL PATHOLOGY AND BACTERIOLOGY IN THE COLLEGE OF PHYSICIANS AND SURGEONS, OF CHICAGO.

AFTER a number of unsuccessful efforts I have found a simple method by which the vas deferens can be reunited after complete transverse division. It may be recalled that I have already succeeded in reuniting the ureter after complete transverse injury, by lateral implantation of the proximal into the distal fragment through a slit in the wall of the latter portion of the duct.[1] This method has been successfully employed in the human subject by Dr. Howard A. Kelly, of Baltimore, in a case in which the ureter was severed unintentionally during an operation for the removal of a large myoma uteri. In the report of the case[2] the operation is termed uretero-ureterostomy or uretero-ureteral anastomosis. The term lateral implantation seems to me preferable.

Experiment, January 15th, 1894. A very large Newfoundland dog was laid upon his back in a trough, and the skin over the scrotum and base of the penis shaved and carefully disinfected. Under ether-anesthesia an incision three-quarters of an inch long was made over the left spermatic cord just below the inguinal ring. The vas deferens was easily drawn through an opening made in the fascia and pulled out through the skin-wound. The duct was then divided transversely with scissors, and retraction of the cut ends prevented by forceps. A tight ligature was applied, one-fourth of an inch from the end of the upper fragment, and, with a very fine, sharp-pointed scissors, a longitudinal incision was made in the wall of this portion of the duct at a point one-fourth of an inch above the ligature. This incision penetrated to the lumen of the tube and extended upward a distance of one third of an inch. Next the distal fragment of the duct was prepared for implantation into the slit in the upper portion. The lumen of the vas deferens is small, in comparision with the diameter of the entire duct, as its walls are composed of dense and thick muscular layers. Hence, in order to enable the lower end to be drawn into the slit in the upper portion of the tube, the muscular walls had to be trimmed off to a tapering point, exactly as one would sharpen a leadpencil. This having been accomplished by the careful use of fine scissors, an incision one-eighth of an inch long was made in the sharpened end of the tube simply to insure a patent opening.

FIG. 1.



A. Testicular extremity of divided vas deferens. B. Proximal extremity. The distal portion, A, has been "sharpened," the opening has been enlarged by a longitudinal slit and the traction-suture has been introduced. The proximal fragment, B, has been ligated and a slit made in the side.

Two fine needles, armed with a single thread, were then passed from within outward through the wall of this portion of the vas deferens, thus securing it in the grasp of a loop of thread. The needles

[1] Extract from the President's Address before the Alumni Association of the College of Physicans and Surgeons, Chicago.

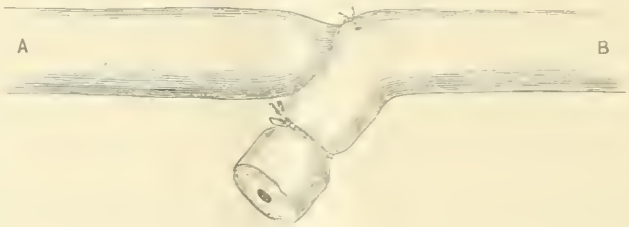
[1] Journal Amer. Med. Assoc., Dec. 16 and 23, 1893.

[2] Annals of Surgery, Jan., 1894.

FIG. 2.

The needles of the traction-suture in the act of being passed through the wall of the proximal fragment from within outward.

FIG. 3.



The distal fragment has been drawn into the proximal segment by means of the traction-suture, which has been tied.

were then passed into the slit in the upper part of the duct, and their points being carried carefully upward within the tube for one-half an inch, the needles were pushed through the wall from within outward, emerging, of course, side by side. It is now easy to see that the *sharpened* lower fragment could be drawn into the upper fragment by the traction-suture. This being accomplished, the ends of the suture were tied together, and, the vas deferens being carefully returned, the wound was closed.

The autopsy upon this dog (killed with chloroform six weeks later) showed (1) a normal testicle upon the side subjected to experiment; (2) no accumulation of testicular secretion below the site of operation; (3) perfect patency of the duct at the point of reunion, as shown by the passage of a small probe; (4) complete continuity of the mucosa throughout; (5) firm union of the muscular walls, with a minimum of scar-tissue.

This simple means of reuniting the vas deferens after transverse injury commends itself, especially in the human subject, as the vas deferens in man is large enough to be fairly easy of manipulation, and it is long enough to admit of considerable shortening without detriment.

As to opportunities for the application of the method, one easily thinks of the possible, although of course rare, wounds due to missiles and cutting instruments; of wounds accidentally inflicted during surgical operations, especially in herniotomies and the open operation for varicocele, and of operations in which it might be desirable to remove a portion of this duct, as in tumors of the cord and, probably more frequently, in cicatricial contractions involving the vas deferens or in accidental and at first unrecognized ligations made during the subcutaneous operation for varicocele.

103 STATE STREET.

CLINICAL MEMORANDA.

SARCOMA OF THE NOSE—EPITHELIOMA OF THE LARYNX IN A WOMAN.[1]

BY HORACE CLARK, M.D.,
OF BUFFALO, N. Y.

THE cases that I have to report are:

1. A case of sarcoma of the nose, defined as a mixed sarcoma, containing melanotic pigment, and

2. A case of epithelioma of the larynx in a woman.

The sarcoma occurred in a woman, seventy-nine years old, whose family history is entirely negative. She has never had any serious illness, and is the mother of a large family. I saw the patient for the first time on October 23, 1893, and made the following memoranda:

About a year and a half ago a peculiar sensation was noticed in the nose. Six months later, during the course of an acute coryza, inability to breathe easily was referred especially to the left nostril. The finger came at once upon a lump, of the size of a small cherry, which was hard, scarcely sensitive, and bled when touched. From this time on, the lump rapidly increased in size and filled out like a little bladder, causing deformity of the ala. Three weeks previous to the date of this note there had been profuse nose-bleed in consequence of a fall. During a period corresponding with the patient's observation of the tumor the eye on this side had readily inflamed, and the lid had been puffy at times. There was an entire absence of pain, but a fulness in the head had been noticed all along.

Upon examination, the left nostril was found to be occluded just within the entrance by a round, bluish-gray mass, showing a superficial loss of tissue equal to about one quarter of the size of the presenting surface. With a probe, this mass was found to be hard, slightly movable, and apparently attached to the inferior turbinated body. It was immersed in a sero-sanguinolent fluid and bled readily.

Posterior rhinoscopy, not being readily practised, was

[1] Cases reported to the Section on Laryngology and Rhinology, New York Academy of Medicine, December 27, 1893.

not persisted in, because the patient had already been subjected to somewhat harsh examination at other hands.

A probable diagnosis of sarcoma was made.

That portion of the growth which presented was removed with the platinum wire. A dull-red heat was turned on until the wire had thoroughly caught. The cautery-loop was then used alternately as a hot and cold snare. The premaxillary fossa was curetted and such parts of the inferior turbinated body as were involved were removed with the cold snare and curet. Except for the larger portions, the curet worked best, for the tumor was very friable. There was very little bleeding at the time of the operation; nor had any occurred five hours later when a dressing was applied.

I had the opportunity of watching the case for six weeks. There is little question but recurrence will take place pretty rapidly.[1] It is worth noting that there was a suspicious-looking area upon the cartilaginous septum in the other nostril, which passed for a simple erosion.

Dr. Elmer Starr, of Buffalo, kindly had this case referred to me.

Epithelioma of the larynx was the diagnosis made in the case of a woman, thirty-eight years old, whom I saw in October, 1893. The notes upon the case in general were supplied by the family physician, Dr. Wilcox, for whom the operation was performed. They are essentially as follows:

The patient's father died of carcinoma. She herself did not present the marked cachexia of this disease. There had never been nausea or vomiting. Curetting had been done for hyperplastic endometritis, but no microscopic examination was made of the scrapings.

My own information relates to difficult swallowing, first noticed in February, 1893, but not until July did this become distressing. Food had often been refused after the latter date, never because of pain, but from inability to complete the act of swallowing. Also, since July, small quantities of yellowish matter had been evacuated by the mouth.

I shall not enter upon the details of the examination further than to say that the growth was found to be attached to the ary-epiglottic ligament on the left side, upon its extra-laryngeal surface, and did not rise above the level of that ligament. With inspiration the larynx presented the appearance of a recurrent paralysis. The bands came together in the median line in phonation, and the growth was carried in that direction. Aside from a general pallor the interior of the larynx presented nothing remarkable. Upon the neck there was a swelling which looked and felt very much like a bronchocele.

It was hoped that the evulsion of as much of the new growth as could be seen would make deglutition easier by giving freer movement to the larynx. The only result from operation was the substitution of a normal for a distorted position. The swelling in the neck had entirely disappeared on the following day. A constriction had probably been removed from the principal outlet for an extensive purulent infiltration of the bronchial glands and surrounding parts. The temperature was normal.

[1] On March 7th, a report from the case states that plugging is necessary to prevent hemorrhage. The tumor has extended into the face, which, with the nose, is enlarged a good deal.

There is nothing of interest in the subsequent care of the case, which was assumed by the family physician.

The autopsy, made ten days after the operation, revealed stenosis of the esophagus, due to an epithelioma extending some four inches downward from the level already mentioned at which the tumor appeared above. There were also two or three carcinomatous nodules upon the wall of the pharynx, showing that metastatic formation must have been very rapid.

The diagnosis in both cases was verified by Dr. Krauss, of Buffalo, whom I also have to thank for some beautifully stained sections from the growths.

Report of the microscopic examination by Dr. William C. Krauss, Professor of Pathology in the Medical Department of Niagara University, Buffalo, N. Y.:

Sarcoma. The tumor, composed of three separate pieces, was delivered to me by Dr. Clark, immersed in a 50 per cent. alcoholic solution, on October 24, 1893. The largest of these masses was as large as a chestnut, the other pieces the size of a bean. The largest piece was covered with a dense fibrous coat, except at its cut surface, and here it appeared mottled, pigmented, somewhat resembling the color of a bronchial gland. Its consistency was soft, friable, and highly vascularized.

Preliminary examination. Several small particles were taken from the large mass, carefully teased, and mounted temporarily in glycerin. Under a one-fifth-inch objective the mass appeared cellular, the bulk of the cells being of the small-spindle variety. Alongside of these spindle-cells were other cells, some resembling small, round cells, others round pigment-cells of a blackish-brown color. As these three varieties of cells composed the bulk of the tumor, I made the diagnosis of mixed sarcoma, probably melanotic.

The particles of tumor-tissue were further hardened in alcohol, imbedded in celloidin, and sections cut with a Schanze microtome. These were stained with picro-carmin and ammonio-carmin, cleared in clove-oil, and mounted in balsam. Examined with a one-fifth-inch objective the cellular structure appeared no less prominent than at the first examination. The spindle-cells, however, did not present the same general outline, because of their grouping and the necessary transverse sectioning through them. The pigment-cells appeared as in the fresh examination, in some sections exceedingly numerous, in others less so. Considerable connective tissue was present, forming a stroma for the support of the cells. The diagnosis made at the preliminary examination was thus further corroborated by the final examination.

Epithelioma. The tumor, composed of seven or eight irregularly shaped masses, was delivered to me, immersed in a 50 per cent. alcoholic solution, on October 21, 1893. In size these separate particles ranged from a chestnut to a small pea. The color was pinkish-red; the consistency soft, compressible. The macroscopic appearance resembled a highly cellular, vascularized tissue.

Preliminary examination. As an immediate examination and diagnosis were demanded, several minute particles were cut from different masses, carefully teased, and then, unstained, mounted temporarily in a normal salt-solution. The tissue was composed entirely of cellular elements, the connective-tissue stroma being sparsely present. The cells were of the flattened,

squamous variety, nucleated and closely packed together. The epithelial pearls were not well marked, and were small. After examining several slides, and finding the same general characteristics, I made the diagnosis of carcinoma, of the flat-celled variety, or, as these are commonly designated, epithelioma.

With a view of making permanent mounts, the tumor-particles were hardened by the alcohol method, imbedded in celloidin, and sections cut with a Schanze microtome. These were stained with ammonio-carmin and picro-carmin, and mounted in balsam. Examined with a Zeiss C objective, the same general characteristics were found that were present at the first examination. The nucleated squamous cells comprised the bulk of the tumor. Occasionally small aggregations of cells arranged concentrically (epithelial pearls) were found, but were not sharply defined. The first diagnosis was unchanged by this examination, the same features being present in both.

My opinion, then, is that the tumor in question must be an epithelioma, the diagnosis being subsequently fortified by the death of the patient.

A CASE OF ACUTE DELIRIUM, WITH AUTOPSY AND BACTERIOLOGIC EXAMINATION OF CEREBRO-SPINAL FLUID.[1]

BY CHARLES S. POTTS, M.D.,
OF PHILADELPHIA,
INSTRUCTOR IN NERVOUS DISEASES IN THE UNIVERSITY OF PENNSYLVANIA, ASSISTANT NEUROLOGIST TO THE UNIVERSITY HOSPITAL.

A DISEASE in which the symptoms are so severe, and the pathologic findings so meager, as is the case with acute delirium, would certainly seem to be due to a violent toxemia of some sort, and should, therefore, be a fruitful field for the bacteriologist.

Bacteriologic investigations in cases of this condition have, however, not been frequent, as, after a hurried search through the literature of the past few years, I have been able to find only one case, that reported by Dr. Carlo Rasori in the *Centralblatt für Bakteriologie und Parasitenkunde*, of October 20, 1893, and who isolated what he describes as small bacilli with rounded ends, three times as long as wide, which appeared generally separate, but were also seen in groups of two or three joined together by their ends. At times a few longer ones, both straight and curved, were seen, which did not take the stain so well. The germs stained darker at their ends than at the center. In a great many ways this description answers to that of the pneumonia-coccus, but Rasori evidently thinks he has found a new germ, whether correctly or not time will determine. As so little work has been done in this direction, the report of the following case of acute delirium may not be without interest.

A. G., thirty-three years old, a member of the medical profession, had, so far as I know, always enjoyed good health. He was, however, of a sensitive nature, and at times subject to fits of depression. His habits were good, excepting during periods of illness, when he took whiskey in excess. There was no history of syphilis. Just previous to the commencement of his last illness he had had considerable family trouble, and he was evidently under a severe mental strain. He first began to complain in the early part of June, when he was attacked with urticaria, which lasted until August, and did not improve under any plan of medication. During this period also he complained at times of lassitude and feelings of chilliness. In the early part of August a carbuncle made its appearance upon his upper lip, which was operated upon by Dr. J. B. Deaver about ten days later, and after which he appeared to be in good spirits, his temperature being normal and his appetite good, even ravenous. After being opened and curetted, the carbuncle healed rapidly, and everything appeared to be doing well until nine days later, when the patient became suddenly highly delirious at about 10 P.M., attempting to jump out of the windows, saying that the people in the house, who were Catholics, wanted to murder him because he was a Protestant.

Drs. J. F. Berlet and Klemm were summoned, and they naturally attributed his condition to the large quantities of whiskey (about one pint daily) and morphin, which he had been taking from the time of the appearance of the carbuncle until a few days before he came under their care. Bromids and chloral were administered, and the next morning the man appeared perfectly rational. In the afternoon he again became highly delirious, ran to the window, screaming "murder," and endeavored to jump out; he said "devils were chasing" him, etc. His nurse reported that during the previous morning he had had several irrational intervals, of which he seemed to be aware, as he inquired if he was going crazy, and told them not to tell Dr. Berlet, as he would think he was crazy.

On the same evening, August 23d, I saw him in consultation with Drs. Berlet and Klemm. As I entered the house I could hear the shouts of the patient; as I came into his room he recognized me and inquired after some members of my family whom he knew were ill, but he immediately entered upon a long harangue about going to Europe to study singing, that he was the finest tenor in the world, etc., and then abruptly asked my protection, as the people in the house wanted to kill him. He would take no medicine or nourishment unless I first tasted it, as he said they wanted to poison him. His temperature was then normal. Hyoscin was administered, and he slept several hours, but awoke in the same delirious condition. He continued in this state, his temperature being normal, until the evening of August 24th, when it was 101° F. The delirium became more violent, and it was necessary to restrain him mechanically. He saw "devils" and had other hallucinations, but he still recognized those about him, and when his housekeeper entered the room he tried to choke her, as she was one of those whom he thought wanted to kill him. He would ask for the vessel when he wished to urinate, and took his nourishment when assured by myself or Dr. Berlet that it contained no poison. On the next day, August 25th, Dr. C. K. Mills was called in consultation, and concurred in the diagnosis of acute delirium. At the time of his visit the rectal temperature was 104.1° F., the delirium still continuing, except for short intervals when the man was under the influence of hyoscin. The temperature gradually rose in spite of repeated antipyretic measures until 12.45 A. M., when it was 106° F.; at 4 A.M, it was 104.2° F. When I saw him, about 11 A. M. on August 26th, he did not recognize me, and refused his nourishment, but was still violently delirious, singing one minute and shrieking for protection the

[1] Read before the Phila. Neurological Society, Feb. 26, 1894.

next. His temperature continually rose, and at 5.30 P.M. it was 107.1°, being reduced to 105.2° by sponging; at 8.45 it was 108.2°. His breathing became irregular and of Cheyne-Stokes type; his pulse weak and rapid; the delirium gradually gave place to coma, and at about 11 P. M., he died. At no time during his illness did he complain of headache.

The autopsy was made by Dr. J. W. McConnell about seventeen hours after death, in the presence of Drs. Berlet, Klemm, Mills and myself. The brain and meninges appeared to be normal, as did all the other organs of the body. Some of the cerebro-spinal fluid that had drained into the base of the skull was collected in a small bottle previously sterilized with boiling water, and from this cultures were made by Dr. D. Braden Kyle, with the result that the presence of a bacillus answering to the description of the so-called micrococcus lanceolatus, or pneumonia-coccus of Frænkel and Weichselbaum, was demonstrated. The staphylococcus pyogenes aureus and the staphylococcus pyogenes albus were also present.

Microscopic examination of the cerebral cortex showed the appearances described by Osler,[1] *i. e.*, perivascular dilatation and leukocytes in the lymph-sheaths and perigangliar spaces.

The possibility of contamination by the instruments used to make the autopsy may be urged, and has occurred to me, as it must be admitted that they had not been sterilized, but if this were the case why is it that only the two forms of bacteria named were present and not others that would much more likely have been present, in fact should, of necessity, have been present. It seems to me probable that if this patient had lived longer the signs of meningitis or meningo-encephalitis would have been present. It will be noted that the germs isolated in this case were the same as have been usually found in the exudate in cases of meningitis.

I would therefore advance as a possible explanation of the lack of macroscopic findings, in spite of the violent symptoms present in the condition of acute delirium, that the toxemia is so violent that the patient usually dies before appearances visible to the naked eye have had time to develop.

In reporting this case I do not claim that we have settled the causation of acute delirium, but I think it probable that in association with future investigations it may have some value.

FLEETING HEMIANOPSIA OF SYPHILITIC ORIGIN.

BY E. J. BERNSTEIN, M.D.,
OF BALTIMORE, MD.

W. C. N., thirty years old, a real-estate broker, came to me August 27, 1892, complaining of inability to read or write after a few hours' exertion. He presented slight marginal blepharitis, which had persisted, more or less constantly, from childhood. The eyelashes were sparse, those remaining being short and stubby. The lids were not stuck together in the morning. The tear-ducts and the rest of the lachrymal appendages were normal.

Reading at night had been uncomfortable for five years, but the asthenopia (?) had been much worse for three weeks.

[1] Practice of Medicine, p. 925.

V., R. E., 6/6? Sn. 0.5 from 18–33 cm.
V., L. E., 6/6? Sn. 0.5 from 12–27 cm.

There was no vertical hyperphoria, but there was an exophoria of 1° in each eye. Distant vision:

R. E., + 0.50 D., cyl., axis vertical, 6/6 full.
L. E., — 0.75 D., cyl., axis vertical, 6/6 full.

I ordered simple cylinders in accordance with this finding. On September 21st the man returned, saying that while vision lasted he could see better with the lenses than without them, but after working till 11 A.M. his vision became worthless, and he could only see to get about by closing one eye and tilting his head to one side. He had also discovered that if he could cast his eyes down and hold a book above their level he could still distinguish large letters. It was only then that I suspected more profound trouble.

Accordingly, the field of vision was taken, when it was found that he could only distinguish large, bright objects in the entire superior portion of each field, while the inferior portion was still normal, so that the scotomata covered a part corresponding to a line drawn 15° *above* the horizontal diameter on the nasal over the whole superior field to within about 15° *below* the horizontal on the temporal.

As I could not complete my examination at this visit, I requested him to come again early the following morning, when I found the field of vision normal in both eyes. The color-sense was found to be good on both occasions.

The patient then told me again that this was the usual course, viz., that he saw well until about 11 A.M., when his sight "gave out."

On further examination I found numerous enlarged glands in the cervical region and above the elbows, and also several large, characteristic syphilitic scars on different parts of the body. The patient then acknowledged having contracted syphilis in November, 1890, for which he had been actively treated and had been told that he was cured.

He smoked some twelve cigars and drank three or four glasses of whiskey daily.

I examined him at various times, and always found the same condition, that is, early in the morning both fields were normal, but after a few hours' work the scotomata made their appearance, the field being preserved in the lower nasal portion, but the unnatural position of the eyes necessary to see with this portion of the field prevented further work.

The ophthalmoscope showed perfectly normal fundi. The retinal veins seemed more engorged and tortuous in the temporal portions of the fundi in the latter part of the day than in the morning. As the patient was considerably run down in health and the weather was very warm, I deferred the use of mercury and ordered syrupus ferri iodidi in large doses and rest in the mountains, with abstinence from all attempts at reading or writing. On October 15th the patient returned, much improved in health and sight. The field of vision had increased so much that the temporal scotomata were only as large as the previously nasal good portion, and would not be thus complete till afternoon. As it was now quite cool, I instituted mercurial inunctions according to the plan of Finger, of Vienna.

By December 1st the man had taken thirty inunctions, and the syrup of the iodid of iron was again given. From this time on his sight improved steadily until he was able to read almost all day, although compelled to rest at night. During January, 1893, the patient took neither mercury nor iodid.

By February 1st vision was normal. The man was again given mercury (not on account of vision, but to combat the old syphilis), which he took for thirty days. Then he took potassium iodid in large doses for thirty days; followed by a rest of like period; and then going on with the treatment according to the plan of Finger.

The point of interest to me was the peculiar recurrence of the scotomata and the portion of the visual field affected.

800 MADISON AVENUE.

MEDICAL PROGRESS.

Myotonia Congenita.—SÜSSKAND (*Zeitschrift für klinische Medicin*, B. xxv, H. 1, 2, p. 91) reports a case of the affection known as myotonia congenita, or Thomsen's disease, and formulates the conclusion that the disorder is a congenital functional abnormality of the voluntary muscular system, consisting in an undue muscular irritability. This manifests itself in that an extra effort of the will is necessary to overcome the tetanus induced in innervated muscles, and which subsides but slowly. The first movement is easily possible; the second, antagonistic movement, only after the cessation of the tetanic condition. If the volitional impulse is affected by a psychic influence (such as a sudden and unexpected command), the conception of the antagonistic movement is aroused and the antagonists are also made tetanic, so that no movement at all is possible. A sudden, unexpected stimulation, psychic or somatic, is capable of setting all muscles into a condition of tetanus (reflex tetanus), so that the patient may be caused to fall. The derangement of function depends upon an increase in number, a diminution in size, and a condensation of the muscular elements within the primitive fibrillæ, together with loss of cohesion among the individual fibrillæ themselves. In the increase in number and diminution in size of the muscular elements resides the cause of the greater susceptibility and irritability of the muscles, whether there be an increased area of contractile surface or a change in the transverse section of the muscle-elements, resulting in turn in a greater difference in the tension of the contained electric force.

A Premonitory Symptom of Pulmonary Tuberculosis.—DESTRÉE (*Wiener medizin. Presse*, 1894, No. 14, p. 593) has observed that in the course of pulmonary tuberculosis the pupil upon the affected side may be dilated without appreciable cause, if only one lung be affected; or either pupil, if both lungs are involved. The manifestation acquires diagnostic significance from its absence in apical pneumonia and chronic bronchitis, with emphysema, though it may be observed in the sequence of attacks of pleurisy. Experiments upon dogs and rabbits showed that inequality of the pupils could be induced by irritation of the dorsal sympathetic nerve. Mechanical or electric irritation of the sympathetic plexus in the neighborhood of the hilus of the lung was followed by dilatation of the pupil on the irritated side, the irritation being transmitted through the first thoracic and last cervical ganglia to the ophthalmic ganglion. An interesting substantiation of these observations is found in the results of post-mortem examinations, which show that in the course of pulmonary tuberculosis the fibers of the pulmonary plexus of the sympathetic nervous system may be subjected to mechanical irritation from the presence of enlarged bronchial glands. As these glands sometimes undergo enlargement before the pulmonary structures are invaded by the tuberculous process, inequality of the pupils may prove to be an important diagnostic sign.

The Radical Cure of Fistula in Ano.—GOELET (*American Medico-Surgical Bulletin*, June 1, 1894) describes an improved operation for fistula in ano which does away with the usual, troublesome, after-treatment in these cases, by securing primary union, and affords complete retentive power, even if there are two fistulæ, and the sphincters must be divided in two places. This result is obtained by carefully uniting the raw surfaces by means of sutures, introducing first continuous buried catgut sutures for the deeper structures, including the muscles, and separate, interrupted sutures of chromicized gut for the mucous membrane and perineum. Emphasis is placed upon the importance of previous divulsion of the sphincter, strict asepsis, thorough curettage of all fistulous tracks, the use of buried sutures for uniting the deeper structures, and separate superficial sutures for the mucous membrane only, with inactivity of the bowels, for five days following the operation.

In favor of this method of suturing, as against the introduction of sutures through the mucous membrane of the rectum, to include the deeper structures, is the avoidance of the danger of infection by leakage along the track of the suture, as well as obstruction to the circulation, and consequent edema that would interfere with primary union.

THERAPEUTIC NOTES.

For Nocturnal Enuresis, MACALISTER (*Practitioner*, vol. lii, No. 5, p. 331) recommends the administration of atropin to the point of tolerance, in conjunction with medicinal doses of strychnin. Thus, he begins with gr. $\frac{1}{100}$ of atropin at night, and gradually increases the dose every third night to gr. $\frac{1}{10}$ and more. When conditions requiring surgical interference are present these receive attention. It is further directed that no drink be taken after 6 P.M., that the medicine be taken at 9 P.M., and that after emptying the bladder the child should go to bed at 10, and that it should be awakened to urinate at 12 and again at 6 A.M.

For Enlarged Glands.—

R.—Iodoformi }
Balsam. Peruvianæ } . . āā ℥j.
Collodii . . . . . f℥j.—M.

S.—To be painted over the swellings every night.

Med. Press and Circular.

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OF MEDICAL SCIENCE.

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SATURDAY, JUNE 30, 1894.

THE URINE OF WHOOPING-COUGH.

Although whooping-cough is one of the most familiar diseases and one of the most universally distributed, its etiology is yet undetermined, unless the observations of Ritter (see The News, January 28, 1893, p. 104) shall receive confirmation. This observer found in the bronchial secretions of cases of whooping-cough a diplococcus which he believed to be specific, and by the inoculation of which upon the air-passages of a tracheotomized dog he induced cough and fatal broncho-pneumonia. Independently of this evidence there is strong reason to believe that whooping-cough is an infectious disease, dependent upon some cause, of animal or vegetable origin, capable of indefinite multiplication in the body of its host. The strongest collateral evidence in support of this view is the transmissibility of the disease. Upon the basis of this assumption it is reasonable to go a step further and ascribe the symptoms of the disease primarily to a local action of the causative agent at its seat of lodgment in the air-passages, and secondarily to an influence exerted upon the nervous system by toxic matters generated as a result of the presence and activity of the invading parasite. This hypothesis would afford an explanation of the characteristic catarrhal and spasmodic symptoms of the disease. In the absence of a demonstrable pathology, we are without adequate data for a scientific therapeusis, so that the methods of treatment in vogue are largely, if not entirely, empiric.

The semeiology of whooping-cough has been fairly fully written, but a recent study of the urine in forty cases of the disease by a Russian observer, Blumenthal, of Moscow, and a report of which appears in the *St. Petersburger medicinische Wochenschrift*, 1894, No. 17, p. 155, has developed a number of interesting facts. The cases occurred in children of varying age, and were observed in private practice and at all stages of the disease. The examinations were made mostly with the morning urine alone, but in a few instances with the total twenty-four-hours' secretion. Briefly stated, it was found that the urine was characterized by a pale-yellow color, a strongly acid reaction, a notably high specific gravity (from 1022 to 1032 and higher) and the deposit of a yellowish sediment of varying amount soon after having been passed. This sediment, on microscopic examination, was found to consist of uric acid; occasionally, amorphous urates were also present. Neither calcium oxalate nor albumin was found. Some specimens exerted a reducing action upon Fehling's solution of copper and with Nylander's modification of Boettger's bismuth-test, but it was not believed that this was due to the presence of glucose. It was thought possible that this reaction might be due to the excess of uric acid present or of combinations of glycuronic acid. Some of the specimens had further an excessive levo-rotatory action, which was also perhaps due to glycuronic acid. The assumption of an excess of uric acid, based upon the specific gravity and the deposition of a sediment, was verified by quantitative analysis.

An interesting fact developed by comparative observations, and which may prove to have practical value from a diagnostic standpoint, at least, was that the peculiar pale-yellow color, the increase in specific gravity, and the excess of urates were evident in the catarrhal stage of the disease, before the paroxysmal cough had made its appearance. These variations appeared to be entirely independent of the pyrexia, and were appreciably modified by the administration of quinin and antipyrin, the specific gravity being lower, the uric acid not being in excess, and the pale and acid urine becoming turbid and alkaline. A milk-diet and febrile complications, especially pneumonia, brought about a

similar result. The opinion is expressed that the changes in the urine, and in particular the increased elimination of uric acid, are due to an abnormal leukocytosis, which makes its appearance early in the course of the disease, but this conclusion was not substantiated by examination of the blood.

These observations require extension and confirmation in order to yield practical and applicable results. They point out the possibility of diagnosis early or in doubtful cases, perhaps before the characteristic cough and whoop have made their appearance, and they suggest that under certain conditions, such as the administration of quinin and of antipyrin, and when certain complications are present, a neutralizing influence is exerted upon the products of the primary disease.

EDITORIAL COMMENTS.

The Formation of a New Epiglottis.—DR. W. S. HUSELTON, of Allegheny Pa., in the *Pittsburg Medical Review*, for May, 1894, describes a most remarkable formation of a new epiglottis after entire destruction of the original organ. His account is as follows:

"The original epiglottis was severed from its connection with the larynx and at once turned upward, where it quietly reposed—obstinately refusing to take any interest or part in the acts of respiration or deglutition. This left the opening into the larynx uncovered and open, and when the patient swallowed drink or food it was simply chance whether it entered the stomach or lungs or both. The manner in which Nature met and overcame this difficulty is perhaps the most interesting as well as remarkable feature of the case, and the one most worthy of note and report. It was not possible for a surgeon to make, in whole or in part, a substitute for the useless epiglottis. There was no material in front of the larynx from which it could be made; it was not possible to operate behind the larynx. Where was this necessary *valve* to come from? I did not know. Nature's resources, however, were not exhausted. In a short time a new formation was seen to be growing from behind the partially reconstructed larynx. Gradually it increased in size, and shaping itself somewhat like the normal epiglottis, soon began to demonstrate that it had a purpose, and that was to take the place of, or to perform the function of the normal, but useless, epiglottis. As I stated, this new formation grew from behind the larynx, consequently when in the act of swallowing, it, in order to close the glottis, had to move *forward* and downward, whereas, as you know, the normal epiglottis in performing this function moves *backward* and downward, thus completely reversing the natural movement. It completely closed the glottis, and he swallows with but little difficulty."

One rises from the perusal of such a report as this with a sense of profound reverence for the wisdom and ingenuity silently working within cellular and organic structures. In a final analysis, of course, the re-creation of a new organ (after destruction of the original one) is but little more wonderful than the first formation in the embryonic structure. The specialization of function, however, always lessens the plasticity of the material, and renders more striking the intelligence that lives in and utilizes living tissues as instruments of purpose.

The Work of the American Medical Association at San Francisco—On the whole the American Medical Association is to be congratulated on the outcome of the meeting at San Francisco. The report of the majority of the Revision Committee both as to the Constitution and the Code was overwhelmingly defeated, and while the Association refused to adopt an amendment to the report of the Trustees disapproving their conduct in the matter of the advertisement of nostrums, it also refused to table a resolution directly bearing on the subject and referred the matter to the Judicial Council. With the Judicial Council therefore the responsibility now rests. While we are not yet informed of the decision of the Council, we are glad to know that they excluded an attempt to drag personalities into the discussion. We trust that the Code-question will now be allowed to drop. The sentiment of the State societies and of the Association's members in general is against revision and against agitation. There is nothing useful to be accomplished by further discussion. The question of the conduct of the *Journal* is not yet decided, and it will depend upon the course pursued by the Editor and Trustees during the coming year, whether or not that subject will again be heard of at Baltimore. For the present, discussion may well be suspended.

Anglicise Titles of Articles.—What nonsense to use Latin titles when addressing an audience, of whom all know English and few know Latin. What an absurdity to Latinize the names of diseases, etc., and write about them in English. What barbarism to make part of the title in Latin and the rest in English. If the Latinization of titles, etc., is worth anything, it is of value only if carried out by all writers, so that readers who do not understand English, and who, perhaps, do understand Latin, may in the catalogues see that a paper has been written on a certain subject. But, will it help him much? Will it help him to see *Otitis media suppurativa chronica*, instead of *Chronic suppurative otitis of the middle ear?* If so, will not his satisfaction be marred by the rest of the title, *Removal of the malleus, intermittent fever, recovery*, in the non-understood English? And then, how about the one hundred or two hundred thousand English and American physicians who do not know Latin?

Why not sometime make an end of sloughing the useless remains of the old medieval Latin snake-skin?

Medical Fees in France.—It is related that a well-known French physician sued a notary, whose wife he had treated, to recover an honorarium of 1500 francs. The lawyer, who had already tendered 700 francs, pleaded that this sum was sufficient. Having heard the advocates on both sides, the civil tribunal delivered judgment, basing its decision on the following grounds: As in a question of medical fees the points to be regarded are the pecuniary situation of the patient and the repute which the physician may have acquired through his labors and his discoveries; and considering in the present case the position of the patient's husband and

the medical eminence of the physician, the sum demanded is not excessive. The tribunal accordingly condemned the attorney to pay the fee of 1500 francs in full.

REVIEWS.

ANTISEPTIC THERAPEUTICS. By E. TROUESSART, M.D. Translated by E. P. HURD, M.D. The Physician's Leisure Library. 2 vols., pp. 316. Detroit: Geo. S. Davis, 1893.

IN the introduction to this work therapeutic agents are divided into three great classes: (1) eusthetic medicaments, or such as act directly on the organism, modifying altered function in such a manner as to favor a return to the normal; in this class are included the alkaloids; (2) hypnotics, or medicaments designed to prevent the constitutional effects resulting from organic alterations; (3) antiseptics, or medicaments which do not act on the organism itself, but upon noxious products of the bodily metabolism or of agents introduced from without. Even if anything were to be gained by such a classification, we are not sure that this one is better than the established one, according to which drugs are used from a prophylactic, curative, or palliative point of view, while, of course, no such classification can be rigidly and arbitrarily adhered to. The body of the book is divided into three parts, the first of which deals with groups of antiseptics from a chemic, pharmaceutic, and physiologic standpoint; the second discusses the clinical applications of antiseptics, the various systems of organs and the affections to which they are liable being considered serially; the third part deals with the antisepsis of hygiene, particularly the hygiene of the sick. The work contains considerable interesting information and should prove useful to those for whom it is intended. The text suffers a little in the translation, which has a tendency to be literal.

STUDIES FROM THE DEPARTMENT OF PATHOLOGY OF THE COLLEGE OF PHYSICIANS, COLUMBIA COLLEGE, N. Y. Vol. III. For the Collegiate Year 1892–1893.

THIS brochure contains reprints of the more important studies published by the workers in the department of pathology in various journals during the collegiate year 1892–1893, and is a praiseworthy exhibition of practical and scientific work accomplished, reflecting credit upon both the director of the deparment, Dr. Prudden, and the individual workers. This collection is the third of its kind, and contains the following papers: "On the Importance of Vibration to Cell-life," by S. J. Meltzer; "Diphtheria and Other Pseudo-membranous Inflammations," by W. H. Park; "Report of a Recent Sanitary Inspection of One of the Sources of the Croton Water-supply," and "A Consideration of Artesian Well and Surface Waters, from the Standpoint of Bacteriology and Public Health," by T. M. Cheesman; "Observations on a Case of Recurrent Amebic Dysentery, with Successive Large Hepatic Abscesses," by J. W. Brannan; "A Contribution to the Pathology of Traumatic Epilepsy," by Ira van Gieson; "Sterilization of Milk at 75° C. (Pasteurization) and its Efficiency in Destroying Pathogenic Organisms," by R. G. Freeman; "A Study on the Etiology of Exudative Pleuritis," by T. M. Prudden; "A Study of the Leukocytosis of Lobar Pneumonia," by James Ewing; "On the Etiology of Appendicitis," by Eugene Hodenpyl.

TEXT-BOOK OF NORMAL HISTOLOGY: INCLUDING AN ACCOUNT OF THE DEVELOPMENT OF THE TISSUES AND OF THE ORGANS. By GEORGE A. PIERSOL, M.D. Philadelphia: J. B. Lippincott Company, 1893.

DR. PIERSOL is so well known as a teacher of histology that a book from his pen will at once receive a cordial reception. The work before us leaves little to desire. In clearness and at the same time conciseness of expression it is a model; and the illustrations, so important in a work of this kind, are most excellent. Nearly all of them were drawn by the author himself from microphotographs or with the aid of a camera lucida. It is needless to call attention to the separate portions of the book, excepting to point out one or two novel features. The plan of including a short account of the development of the tissues and the organs at the end of the various chapters will meet with general approval. The description of the cell and of the structure of tissues in general is especially clear and interesting. Of the chapters devoted to special tissues we are particularly attracted to those concerning the nervous system. This book is undoubtedly the most useful smaller work on histology in our language.

THE POST MAGAZINE ALMANACK, THE INSURANCE DIRECTORY, REFERENCE, AND YEAR-BOOK: Containing Statistics and Facts of Ordinary Life, Industrial Life, Fire and Accident Insurance. London: T. J. W. Buckley, 1894.

THIS volume of one hundred and ninety-one pages will prove of special interest to insurance men in England and on the Continent, as is evidenced by the table of contents. In this we note, among others, the following subjects: Foreign Offices Opened in London; British Companies Ceased to Exist; British Life Business in 1892; Registration Fees, Licenses, and Taxes; House of Lords; House of Commons; Actuarial Institutions; New Companies; Directory of British Insurance Offices; Statutes relating to Life Insurance; Rates of Premium; Synopses of Ordinary Life, Industrial, Fire, and Accident Accounts; Synopsis of Accounts of Continental Insurance Companies; British Insurance Companies in Canada and America. There is also a complete Calendar for 1894, with Historical Memoranda. The book must fully answer the purpose for which it was published.

OUTLINE OF PHYSICAL DIAGNOSIS OF THE THORAX. By ARTHUR M. CORWIN, A.M., M.D., Demonstrator of Physical Diagnosis in Rush Medical College, etc. Pp. 111. Chicago: W. T. Keener Company, 1893.

THIS little book may find a limited usefulness in the ward-class or recitation-room as a stimulus to a flagging memory It teaches nothing that the student should not be familiar with from other sources, although it groups in concise and convenient form the method, the course, and the results of physical examination of the chest. Failing to possess the knowledge that the use of this

book presupposes, the student can scarcely do worse than to hope to profit by memorizing its contents.

THE PHYSICIAN'S WIFE AND THE THINGS THAT PERTAIN TO HER LIFE. By ELLEN M. FIREBAUGH. 8vo, pp. xi, 186. Philadelphia: The F. A. Davis Company. London: F. J. Rebman, 1894.

THIS neatly printed little volume details many of the experiences that are wont to happen in the domestic life of the country doctor. The delineation is faithful, the narrative interesting, the illustrations appropriate. The book is perhaps best adapted for those to whom it is dedicated, physicians' wives, but it should prove instructive and entertaining to all intelligent persons.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY. Fifth Session, held at West Point, N. Y., May 24, 25, and 26, 1893. Edited by FLOYD M. CRANDALL, M.D. Vol. V. Printed by Bailey & Fairchild, 1893.

THIS volume contains twenty-eight papers by representative pediatrists of this country, and does not call for extended comment here, inasmuch as a *rêsumê* of the proceedings of the meeting was presented in THE NEWS for June 10, 1893, p. 637. It remains but to state the work does credit to the body from which it emanates.

BRAITHWAITE'S RETROSPECT OF MEDICINE, for the six months ending December, 1893, is out promptly. Vol. CVIII maintains the distinctive features of its predecessors. The selections have been carefully made, the synopsis is good, and the index full. The preservation of the exact words of authors, while it diminishes the number of articles referred to, increases in many cases the value of the reference. We are gratified to note the number of citations from THE MEDICAL NEWS and *The American Journal of the Medical Sciences*.

CORRESPONDENCE.

PALATE-HOOK.

To the Editor of THE MEDICAL NEWS,

SIR: The palate-hook, or retractor, figured in THE MEDICAL NEWS of May 26, 1894, p. 574, and described by Dr. A. H. Cleveland, was invented in 1889, by Dr. F. Sohon, of this city, while a student under the late Professor Schnitzler, of Vienna. It was described and recommended by Professor Schnitzler in his *Klinischer Atlas der Laryngologie und Rhinologie*, p. 29 (Wien, 1891).

Very respectfully,

W. H. COFFRON.

5 TENNESSEE AVE., N. E., WASHINGTON, D. C.

NEWS ITEMS.

Changes at the Medico Chirurgical Hospital.—At a recent meeting of the Board of Trustees of the Medico-Chirurgical College the following appointments were made: Dr. Isaac Ott, of Easton, Pa., Professor of Physiology; Dr. William E. Hughes, Professor of Clinical Medicine; Dr. Albert E. Roussel, Assistant Professor of Clinical Medcine, and of Practice of Medicine; Dr. Charles W. Burr, Clinical Professor of Nervous Diseases; Dr. William C. Hollopeter, Clinical Professor of Diseases of Children; Dr. Arthur H. Cleveland, Clinical Professor of Laryngology; Dr. Edward B. Gleason, Clinical Professor of Otology, and Dr. William Blair Stewart, Lecturer in Therapeutics.

Professor Edwin J. Houston and Dr. Henry Fisher were elected members of the Board of Trustees.

Cholera in Europe.—A dispatch from Paris states that sixty cases and fifteen deaths from cholera have occurred at Jemmapes, near Liége, Belgium.

Jemmapes is a town in the province of Hainaut, on the Haine River and on the canal from Mons to Conde. Mons is the nearest large city. It is fifty miles distant from Antwerp and close to the French frontier. The place has a population of 13,000 engaged in brewing, tanning, and coal-mining.

The Railway Surgeon is a new bi-weekly publication, issued from Chicago as the official organ of the National Association of Railway Surgeons, and edited by Dr. R. Harvey Reed.

Dr. A. P. Ohlmacher has been elected Professor of Pathology and Bacteriology in the Medical Department of the University of Wooster.

Dr. John S. Billings has been made Lieutenant-Colonel and Deputy Surgeon-General of the United States Army.

BOOKS AND PAMPHLETS RECEIVED.

Non-malignant Tumors of the Larynx. By W. Scheppegrell, A.M., M.D. Reprinted from the New Orleans Medical and Surgical Journal, 1893.

Laboratory Instruction in Elementary Comparative Anatomy and Embryology. By A. P. Ohlmacher, M.D. Reprinted from the New York Medical Journal, 1894.

U. S. Department of Agriculture. Bureau of Animal Industry. Bulletin No. 4. A Revision of the Adult Cestodes of Cattle, Sheep, and Allied Animals. Prepared under the Direction of Dr. D. E. Salmon, Chief of the Bureau of Animal Industry. By C. W. Stiles, M.D., Ph.D., and Albert Hassall, M.R.C.V.S. Washington: Government Printing Office, 1893.

Surgical Treatment of Tumors of the Neck. By Thomas H. Manley, M.D. Reprinted from the Medical Brief, 1893.

The Pathology, Symptomatology, and Treatment of Hemorrhoids, Simple and Complicated. By Thomas H. Manley, M.D. Reprinted from the St. Louis Medical Review, 1893.

Tumor of the Cerebellum. By J. T. Eskridge, M.D. Reprinted from the International Medical Magazine, 1893.

Electric Illumination of the Stomach. By Julius Friedenwald, A.B., M.D. Reprinted from the Maryland Medical Journal, 1894.

Contribution à l'Étude anatomo-pathologique et pathogénique de la Broncho-pneumonie varioloque. Par B. Auché, Agrégé à la Faculté de Médecine de Bordeaux, Médecin des Hôpitaux, Chef des Travaux d'Anatomie pathologique. Extrait.

Some Thoughts on Higher Medical Education and Medical Ethics. By David Cerna, M.D., Ph.D. Reprinted from the Medico-Surgical Bulletin, 1894.

A Case of Perineal Lithotrity, with some Remarks upon Dilatation of the Prostate. By L. Bolton Bangs, M.D. Reprinted from the Annals of Surgery, 1893.

Treatment of the Diseases of the Stomach and Intestines. By Albert Mathieu, M.D. New York: Wm. Wood & Co., 1894.

Le Service Électro-thérapeutique à l'Hôpital de la Nouvelle Orleans. Destinés au Traitement des Maladies des Yeux, du Nez et de la Gorge. Par les Drs. A. De Roaldès et W. Scheppegrell. Extrait de la Revue Internationale d'Électrothérapie.

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